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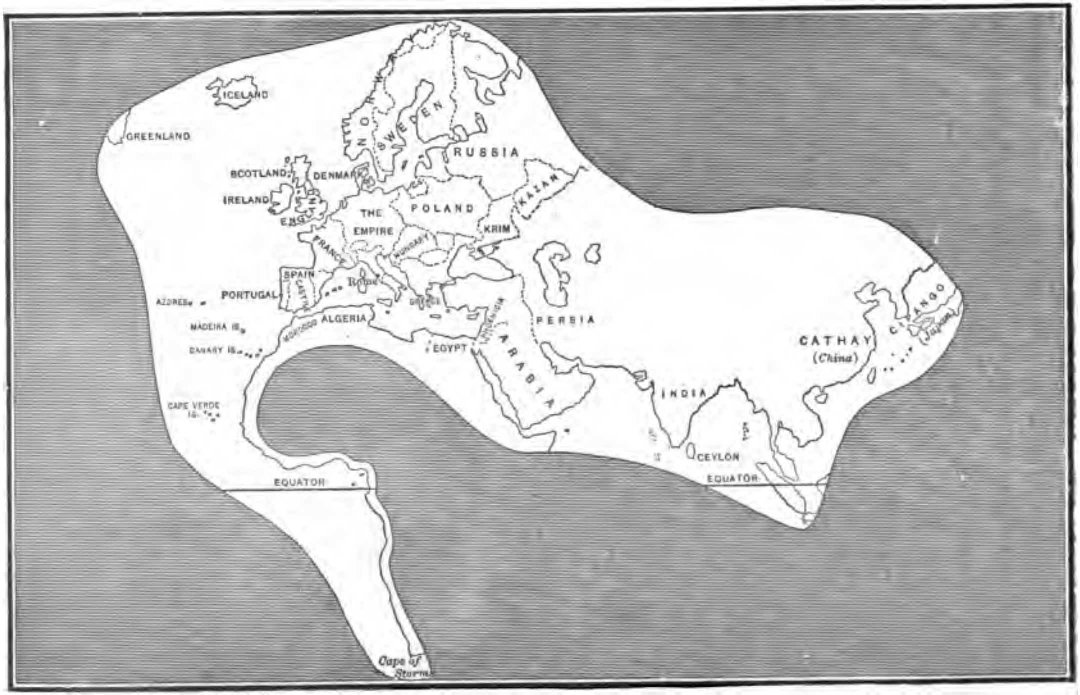

THE WORLD AS KNOWN BEFORE THE ERA OF DISCOVERY

FOUNDATIONS
OF
AMERICAN CIVILIZATION

AN ELEMENTARY HISTORY
WITH CIVICS

For 7A

BY

ARTHUR T. GORTON

PRINCIPAL IN THE PUBLIC SCHOOLS, NEW YORK CITY

NEW YORK
CHARLES E. MERRILL COMPANY

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PREFACE

In this book, events and dates are considered as secondary in importance to the effect of events on the growth of civilization. The author has endeavored to follow the development of civilization from its beginnings in the supremacy of Phœnicia up to the discovery of America. Only such facts and events as have a bearing on our modern civilization have been included.

Care has been taken to make the subject matter as clear and pertinent as possible, in order that the more important points in the growth of civilization may be impressed upon the child's mind, standing out above the interesting but irrelevant matter which is found in a general history of the world.

Part Two of this book takes up the great inventions of the world's history. The whole book presents, as its title indicates, the foundations of American civilization, upon which may be built, in further study, the political and economic growth of the United States.

The teacher will readily see that there is a large opportunity here for outside reading on general history. This reading should be done, not in the regular textbooks, but in books dealing with tales of the heroism of the great men of the world, or with some special phase of history. Such reading will be found valuable in awakening the child's interest and increasing his knowledge of history.

The author acknowledges his indebtedness to Willis Duff Piercy for the privilege of using in Part Two certain material from his book entitled *Great Inventions and Discoveries*.

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PART ONE

THE GROWTH OF CIVILIZATION

I

INTRODUCTION

Many hundreds of centuries ago, the first men came into existence. They had no homes, such as we have to-day, but were forced to seek shelter in the hollow trunks of trees, in branches, or in caves. For food they were dependent on the wild animals they could kill, on the roots and berries that grew around them, or on fish in the streams near the place where they dwelt. They had no clothes, except perhaps the skins of wild animals, and they led a very simple and primitive life. In fact, these first men were little better than the animals living around them.

Now let us turn from the picture of those far-away days to the present, and see, for example, what is the life of a modern New York man. Here in the great city is every convenience that thought, discovery, and invention can provide. Everything is arranged for our comfort and the best possible opportunities are offered us for progress and success.

A business man has only to open his newspaper to see what has been happening all over the world.

Ocean cables and telegraph wires have sent the news from distant countries. When he goes to his office, he finds letters brought in by fast mail trains. If he wishes to answer them, he dictates replies to his stenographer and in a few moments has the typewritten sheet in his hand. A cablegram arrives from London or maybe from South America, sent only a few moments ago. Perhaps there is something of importance to be talked over with a business associate in Chicago. Right there at his desk is the telephone, and in almost no time he is speaking over hundreds of miles of wire. Or he may find it necessary to go to Chicago on important business. He takes a train in the afternoon, dines comfortably, sleeps in a comfortable bed, and reaches his destination in time for breakfast the next morning. He takes an electric car or an automobile, is whirled rapidly to a large building, and then whisked upstairs in an elevator.

This picture is quite different from that of the primitive man living in a cave or hollow tree, with only wild animals or roots for food. Gradually, step by step, little by little, the change has been wrought, and this steady advance through centuries of achievement is what we call *civilization.*

The history of civilization is the history of the growth of nations and individuals. Different nations have accomplished different things and have given their knowledge to other nations. Some few individuals have seen farther than their fellow-men in certain directions, and their enlightened vision has meant another step forward in the advance of civilization. It makes no difference how small a thing may seem; it may be only the planting of a tree, but if that tree is planted better than other trees before, it means a step in advance, a footprint of civilization.

In nearly everything that man has done, he has had to struggle against the forces of nature, and his victory over them marks many pages in the history of civilization. Great mountains separate one country from another, but man digs tunnels and sends his steam engines and trains straight through. Deep waters and stormy seas divide continents from each other, but man builds strong ships to brave wind and wave. When cold weather comes, he has the protection of heat and clothing to keep him warm. When the sun sets and darkness descends upon the earth, he makes artificial light to illumine his pathway.

All the things which we have to-day, have been the outgrowth of the development of mankind which we call *history*.

In the following pages we shall see how the world prepared for what is to us the greatest event in the history of the world,—the discovery and settlement of America. We shall see also how the comforts which we have to-day, were given to us piece by piece, not only before our country was known, but since its discovery.

II

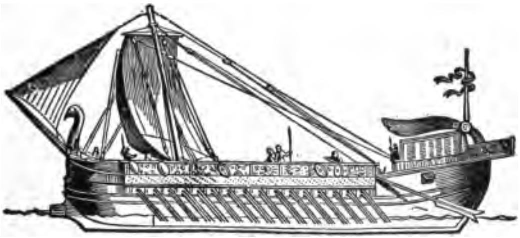
PHŒNICIA

The Kingdom of Phœnicia. Three thousand years ago there existed on a narrow sandy strip of land at the extreme eastern end of the Mediterranean Sea, the little kingdom of Phœnicia. This stretch of seacoast, barely twenty miles wide and less than two hundred miles long, was destined to be the birthplace of man's dominion over the sea.

The country was not fertile and little would grow on the rocky and sandy soil, except the date palm. But the mountains that shut it in from the rich country beyond, were covered with the giant cedars of Lebanon, which were known and used in building throughout the world of that day. Egypt was then in her early youth and required large quantities of this valuable wood. Solomon, the king of Israel, sent for it when he built his temple.

A Maritime Nation. To cut these giant trees and float them down to the sea, and to transport them to the markets of the world, gave the men of Phœnicia their only form of industry and their only means of profit. They exchanged their lumber for other commodities from other lands. Forced to depend upon other countries for the necessaries of life, because of the sterility of their own land, the Phœnicians found commerce a necessity. Their ships put boldly to sea and soon were seen creeping all along the shores of the Mediterranean wherever there appeared chances of trade and profit.

The Rise of Phœnicia. As their reputation for seamanship increased, the overland trade from the fertile and populous valley of the Euphrates River, which lay far to the east of them, was brought to the Phœnician coast to be transported to the distant nations along the shores of the Mediterranean. Through this growth in their commerce, the Phœnicians became rich and powerful, and their chief cities, Tyre and Sidon, became famous over the known world.



A PHŒNICIAN SHIP

Contributions to Civilization. These two cities were the business centers of the world. As the Phœnicians expanded their trade, the necessity for accounts brought forth new methods of recording their dealings. The only writing then in use was a form of word pictures or symbols, which were cumbersome and difficult both to write and to read. Gradually shorter forms were invented and these eventually resulted in a series of symbols expressing sounds. This was the beginning of our alphabet of to-day, and from it developed a form of writing.

How Phœnician Civilization was Spread. The Phœnician traders roamed throughout the Mediterranean Sea and planted trading colonies in many places. On the coast of Tarshish, or Spain, they founded Cadiz. On the northern coast of Africa was built the city of Carthage, which became one of the greatest cities of her time. The Phœnicians even passed through the narrow strait at Gibraltar and traded with the distant isles of the sea, as far as Britain, from which they brought tin. They carried the culture and art, and all the inventions and formulas of the old Eastern civilization, especially the alphabet, to the tribes on the islands and in the countries of Europe with which they had trade relations.

EARLY WRITING
Before the invention of the alphabet

The Fall of Phœnicia. The wealth of Tyre and Sidon naturally attracted the attention of the older and more powerful civilizations of the East. About 850 B. C. the Assyrians conquered Phœnicia. Two hundred and fifty years later the Egyptians overran the country. Three years afterward, the king of Babylon, then the greatest empire of the world, added Phœnicia to his domain.

From this time the power and wealth of Phœnicia waned. Her fleets became smaller and smaller, her men and women were carried away as captives, and the sand reclaimed the land which had been under cultivation. The cities crumbled and were covered over, until by the second century B. C. even the site of their former glory was lost.

Phœnicia, however, had done her work. She had given the world many useful inventions. She had collected whatever was of value from all corners of the earth and had spread it wherever her ships had touched. If she had never done any other thing, her invention of the alphabet would have placed Phœnicia among the great benefactors of the world.

III

GREECE

The Nature of the Country. Among the peoples with whom the Phœnicians traded were the tribes of Greece, who lived on the islands and the mainland at the extreme end of the Balkan peninsula.

This country was very rough. It was cut across by mountain ridges, between which lay tiny plains and fertile valleys sloping to the sea. The mountains were so steep and rugged that each of these valleys was shut off from those on the other sides. In these valleys lived small groups or tribes of people, whose chief occupations were farming and sheep raising.

Though the mountains practically cut off Greece from the lands to the north, many of the valleys reached the sea between rocky walls which afforded small but secure harbors. In the course of time the sea traders of other nations entered these harbors. Thus the Phœnicians and the Greeks became known to each other and gradually an important trade developed between the two peoples.

Gulfs and harbors gave easy access to the sea and the many outlying islands were available as places of refuge for the sailors in case of storm. Greece, in this way, was in a most favorable position to enter into commercial relations with the more civilized nations to the east. Thus she received, besides the ordinary articles of merchandise, the myths and legends, the poetry, sciences, and arts of those eastern lands, to which she herself was a stranger.

The Growth of Greece. The physical features of the country favored the division of the Greek people into a multitude of independent republics. Each town had its rivers, its fields, its pastures, and forests, and nearly all had a seaport. All the elements required for a free community were to be found within each of these small districts. The nearness of other towns kept alive a feeling of competition, which too often resulted in battle. Independence was stamped deep on each Greek mind, and nothing could be stronger than the reverence of the Greek for his native city, or his jealous regard for its freedom.

As the tribes increased, and the population of a town became too great for its area, a group of people moved out to one of the numerous islands along the coast. When they found a site which recalled their native city, they built a new settlement. Thus the people became natural seamen, a nation of sailors, and through this sea life they were brought into contact with other lands. Gradually these Greek settlements became very numerous, until by the fifth century B. C. they were to be found all along the coast of the Ægean Sea, in Sicily, and on the southern part of the Italian peninsula.

Meanwhile, at home the many independent towns were overshadowed by the power of the great cities of Athens, Corinth, Thebes, and Sparta. Each of these became famous as the home of culture and learning. Finally Athens and Sparta gained the ascendency over the others and became the centers of rival sections of the Greek people.

The People. No other people, as a race, were ever so gifted with personal beauty as the ancient Greeks, or Hellenes, as they called themselves, and no others ever prized this gift so highly. At festivals and in public processions the fairest were placed first, and prizes were given to the handsomest man and the most beautiful woman.

In mental qualities the Greeks were as supreme as in physical beauty. They possessed, as a race, courage of the highest order. They were endowed with an intelligence which placed them on a plane far above their contemporaries in an age when the coarser senses and more brutal instincts were too commonly in control. They possessed in the highest degree a sense of the beautiful, and they loved delicate outlines of form and color.

THE ACROPOLIS AT ATHENS

These qualities of mind made the Greek a man of courage and of deep thought, devoted to art, sculpture, and philosophy. Philosophy may be said to have had its birth and to have grown to maturity in Greece, for all the learning of the world was brought to it and there developed to its highest form. Even to-day the names of the philosophers Plato, Aristotle, and Socrates stand high on the roll of the world's profoundest scholars.

Art. In art the Greek set himself to express in color and in stone the beautiful things which he saw about him. Nothing remains of his pictures except the statements of the men of his time. It is said that once a Greek artist painted a picture of fruit so perfect that the birds flew down and pecked at it. Another painted a door over which hung a curtain. So perfect was it that a friend tried to draw the curtain aside in order to pass through.

Literature. Greek literature, too, abounded in the beautiful. The *Iliad* and the *Odyssey*, the works of Homer, are considered the highest form of epic poetry. Among the great names of those whose works still exist, are the poets Sappho and Pindar, and the dramatists Æschylus, Sophocles, and Euripides. Herodotus is called the Father of History, and next to him stands Xenophon, who told the story of a Greek expedition against Persia. There were many famous orators, but the greatest of these were Pericles and Demosthenes.

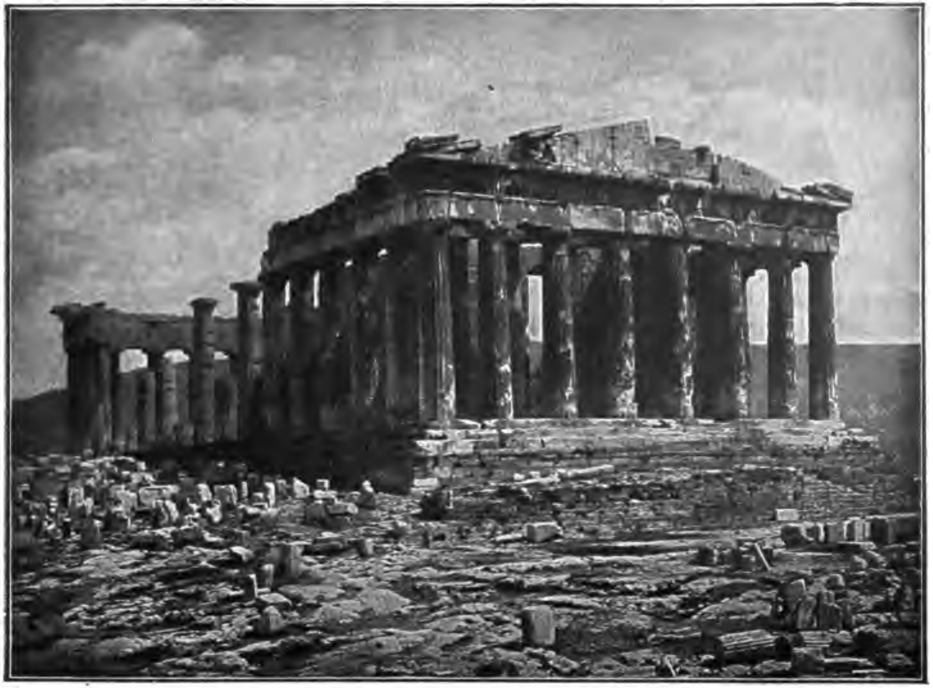
Sculpture and Architecture. Greek sculpture has never been equalled. Fragments and whole statues still exist to-day, and they are regarded as the highest development of the art. The Greek also expressed his love for the beautiful in his architecture. The ruins of Greek temples and other public buildings show that the builders knew, to the minutest detail, the principles of architecture. They applied these principles in such manner that their structures are used to-day as models for modern construction.

The most perfect example of Greek architecture is the Parthenon. This temple at Athens was built by Pericles about 438 B. C. It was 228 feet long and 101 feet wide, and its walls were sixty-six feet high. The whole building and the sixty-six columns which surrounded it, were constructed of marble. The decorations included a wonderful frieze four hundred feet long, on which were pictured the combats of the centaurs, a mythical race, half-man and half-horse. In the perfect proportions of all its parts, and in the harmony of their union into an edifice, the Parthenon surpasses all other buildings erected by the hand of man.

VENUS OF MILO

A marble statue discovered on the Island of Milo in 1820. Now in the Louvre at Paris.

The Olympic Games. The Greeks held many fes-



THE RUINS OF THE PARTHENON AT THE PRESENT TIME tivals, the most famous of which were the Olympic games. These were held for years at Olympia. During the games, wars between the Greek states ceased, in order that the traveler might be safe, for people came from all parts of Greece and from the Greek colonies to attend the games. There were no hotels in those days, so all the visitors had to bring their tents, bedding, and food.

The games lasted several days and contestants came from all over Greece to take part. The victor's prize was a crown of wild olives; to win it was considered the greatest honor possible to a Greek. Each winner was given a feast and was escorted to his home with every mark of honor. A statue was erected in his honor, and for the rest of his life he was held in great respect.

The Spartan Training. It is not surprising that the Olympic games are commemorated to-day, for the Greeks were wonderful athletes. They admired physical beauty and strength, and made every effort to attain physical perfection. In Sparta the people went so far as to expose each new baby boy to the weather on an open hillside. Unless the child had a strong constitution, he could not survive the ordeal. If he lived, he was taken back to his parents, who cared for him until he was seven years old.

The boy then left his home and lived with other boys of his age under the care of teachers. He was allowed to wear only a small amount of clothing, and to eat only a certain amount of food, most of

A SPARTAN ATHLETIC GAME

which he had to secure for himself. He was compelled to follow a regular program of training, which included running, jumping, swimming, and wrestling. In his fourteenth year, he began to practice the use of weapons and to study the art of public speaking; the first to prepare him to be a soldier, and the second to be a statesman. At seventeen, the young man was placed in the army and was generally sent out on the frontier, where he was supposed to learn all the duties of a soldier from actual experience.

The Rise of Greece. The fame of the Greeks spread throughout the world. Scholars from every nation visited Athens to learn from her wise men. Greek art was prized everywhere, and examples of it found their way to all countries. The Greek warriors were held in the greatest respect, and it was even said that an enemy fully expected to be defeated whenever he confronted them. For centuries the country flourished and increased in knowledge, power, fame, and riches. The great cities of Sparta, Thebes, and Athens each tried to make itself supreme over the others, but all their attempts failed of complete success.

The country was protected from attacks by the powerful nations of the north, by the great ranges of mountains, and Greece for a long period was never subjugated. In 481 B. C. the king of Persia was nearly successful. In 338 B. C., Philip, King of Macedonia, in a battle fought at Chæronea, conquered all the Greek cities. Philip was succeeded two years later by his son Alexander, who had been brought up by Greek tutors and at the age of thirteen had been a pupil of the Greek philosopher Aristotle.

The Spread of Greek Ideas and Greek Art. Alexander built a mighty kingdom, which extended far into Asia and down into Egypt. He founded seventy new cities throughout the East, and as these grew, Greek traders, merchants, and workmen thronged to them. They were soon followed by the Greek scholars, whose services were much in demand as teachers. Thus each new city became a new center of Greek culture and learning.

The most famous of these cities was Alexandria, which was located in the northern part of Africa at the mouth of the Nile. This city soon became not only a center of commerce but the most noted city of the world. It was carefully laid out with streets at right angles and with frequent open squares adorned with Greek temples and statues. To it came caravans from Persia and Arabia, some of which brought the rich products of the Indies and China. Cargoes came from the heart of Africa, from Europe, and from the islands of the Mediterranean. It was the market-place of Europe and Asia.

Alexandria was even more famous on account of its intellectual life. Just as it was the center of commercial traders, so the wise men came from all directions to learn from others or to teach what they themselves knew. A great university grew up in the city with a library of over 500,000 volumes containing all the knowledge of the earth.

The scholars who studied at this university were numbered by the tens of thousands, and as they separated to go to their own countries, they carried with them the influences of the transplanted Greek thought and Greek customs to the uttermost parts of the earth.

The Fall of Greece. In 323 B. C. Alexander died. With his death began the decline of Grecian supremacy. The Grecian states returned once more to their former condition of independence, but they were so occupied with quarrels among themselves that their influence waned. In 168 B. C. the Romans from Italy conquered Macedonia, and twenty-five years later they overran Greece and made her a Roman province.

Greek Influences on the Present Day; Architecture. Before the Greek era, the most enlightened nations were the Persians, the Egyptians, and the Hebrews. In each of these countries the art of building had reached a high state. Their structures were huge, clumsy, even grand, but their main characteristic was solidity. Everything was on an enormous scale, but there was no grace or real beauty. The Greeks, on the other hand, though they sacrificed nothing of strength or permanence, built with an eye to grace and lightness.

The examples which have come down to us from these countries show the differences plainly. In

THE DEATH OF ALEXANDER THE GREAT

Egypt, we have still the pyramids, the Sphinx, and the stately ruins of Karnak. Compare these with what remains to-day of the Parthenon at Athens, with its perfection of structure, its simplicity of outline, and the perfect relation which each part bears to every other part.

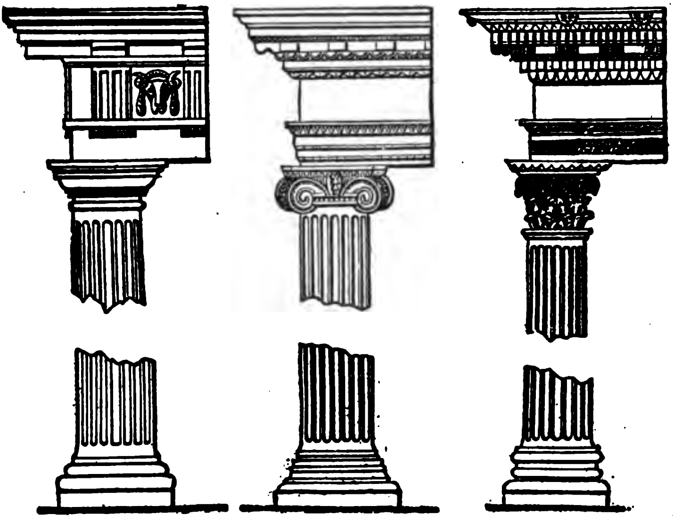
The older nations were fond of an excess of ornamentation. Wherever possible, the walls and the pillars were covered with carvings. These carved pillars were, in fact, historical monuments on which were described, in the picture writing of the time, the events of the reigns of the various kings who built them.

The Greeks, too, possessed the love of ornamentation to a high degree, but it took shape in a very different form. With them, the decoration of a building was a part of the whole structure. Instead of covering the building with inscriptions, they set apart certain spaces whereon they placed sculptures which showed, in natural form, the events they wished to record. Generally the space so chosen was at the top of the walls, forming a border between the sides and the roof. It was called a frieze. These sculptures were the work of the greatest artist obtainable, and were only secondary in importance to the structure itself.

In the use of columns, the Greeks worked for lightness instead of massive form, and by fluting the column, they took from it any suggestion of undue heaviness.

THE RUINS OF AN EGYPTIAN TEMPLE

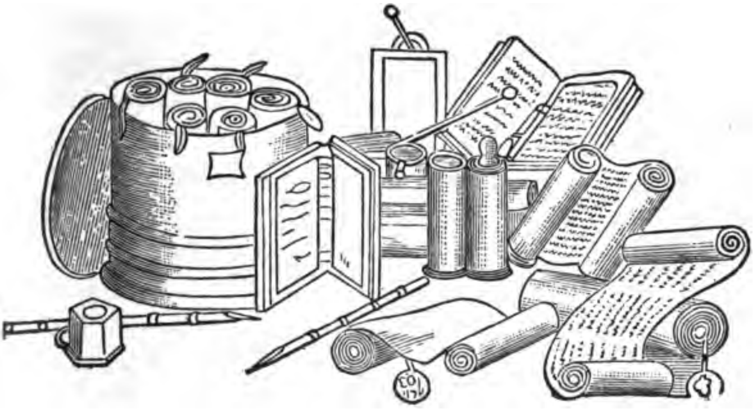
Wherever the Greek colonists settled, they built temples and gymnasiums, and so the Greek structures became widely known and were used as models of building by future ages. To-day, as you look about, you will find many buildings patterned after the Greek forms of centuries ago, such as the Public Library and the Metropolitan Museum in New York City.


Doric Ionic Corinthian

THE THREE ORDERS OF GREEK ARCHITECTURE

Writing. Very early in their history, the Greeks were taught an alphabet by the Phœnicians with whom they traded. This they developed and improved, until it became a series of twenty-six sounds, each represented by a single symbol. The Greek traders and colonists carried this alphabet with them in their journeyings, until it finally reached Rome. By Rome it was spread abroad, and in a slightly modified form it is the alphabet we use to-day.

In order to understand what a wonderful advance this invention was, it is only necessary to compare a specimen of the old picture writing or symbol writing with the new form. Perhaps as good a comparison as any can be made with the present Chinese characters, which you see on laundry tickets. Each of these marks represents a sound, and it is said that over 30,000 are necessary for ordinary writing.



EARLY MATERIALS AND IMPLEMENTS OF WRITING

Other Greek Influences. One might continue to show many ways in which we are to-day indebted to the Greeks. Their statues are the finest in the world and their literature is used to-day in our schools. We have revived the Olympic games, and use some of their form of training in our athletics.

Much of our educational system is based on the old Greek education. Their motto, "a sound mind in a sound body," is the basis of the present-day method of combining physical training with mental development in school work.

IV

ROME

Location. In Italy, about fourteen miles from the mouth of the river Tiber, there rises on the left bank a series of seven low hills. For twenty-five hundred years the name of Rome has been associated with these hills.

The Legend of the Founding of Rome. Of the origin of the name "Rome" we have no certain knowledge. The fable which has come down from very ancient times tells us that two twin baby boys, Romulus and Remus, were seized by their uncle and placed in a wicker basket which he set adrift on the Tiber. The basket was cast ashore, where a she-wolf found it. She took the babes, cared for them, and reared them.

When they had grown to manhood, they founded a city near the place where they had been rescued. Later, in a quarrel, Remus was killed by his brother Romulus, who named the city after himself. He became its king and reigned many years. He conquered the neighboring peoples and made himself master of the surrounding country. This is only a legend, but we might well believe it true, when we consider the character of the Romans and the history of the Roman nation.

Roman Character. The Romans were by nature a warlike race. "They were the wolves of Italy," says one historian. Their business was war, just as trade was the business of the Phœnicians. Their great ambition was to bring other nations under their power and to make them servants.

To be a Roman citizen was in their minds the highest honor to which a man might aspire. All other men were considered by them to be barbarians and hence the natural prey of Rome. When they conquered another nation, they usually made slaves of the people, and carried off all the movable valuables, destroying what they could not take away. In other cases, the conquered people were required to swear allegiance to Rome and to pay yearly tribute or taxes. The Romans were constantly fighting, and in a short time they made themselves masters of the entire Italian peninsula.

The stories of the great men of Rome show that the peculiar trait of the Romans, and the secret of their success, was *discipline.* We do not read of the personal prowess of their heroes, but in every case we see the conviction that a thing must be done because it is duty. Rome expected it to be done and that was enough. In every great event in Rome's long history, this trait of obedience stands out above every other fact. Horatius kept the bridge against hundreds because he had been placed there to do it. Cincinnatus left his plow and went to lead the army because Rome called him. A general put to death his own son who had fought and won a battle against orders, because he had been disobedient. So on through her history appear many similar instances.

Roman Conquest of Greece. After becoming master of Italy, the Roman legions set out to conquer other lands. One by one, they conquered and brought into subjection all the lands near Italy. Then they sailed to Greece, which, after the death of Alexander, they found an easy conquest.

True to their nature and practice, the victors carried away from Greece everything which they found of value. At first this consisted only of the usual spoil, such as arms, gold, silver, and whatever aroused the desire of the soldiers. But as the wealth and splendor of the nation increased, the natural taste of the Roman led him to carry home whatever would add to Rome's splendor and magnificence. Shiploads of statues and paintings and even parts of buildings were sent back as spoils of war to adorn the halls and palaces of their home city.

From the products of the Greek artists, the next step was to bring over the artists and artisans themselves. These soon came to Rome in large numbers, to create for Rome what the Romans themselves could not create.

In literature, as well as in art, Greece became the teacher of Rome. The Roman mind was active but not imaginative, hence what little Roman literature existed at that time contained a wealth of fact but little beauty of expression. So the Romans turned to Greece for their models and, as has been said, "no Roman author ever arose who had not as the beginning and source of his achievements, the fathomless fountain of Greek culture."

The study of the Greek language became the pastime of the patricians, or nobles, and its effect upon the Roman language was soon apparent. It became the fashion for the sons of Roman nobles to have Greek teachers and thus, in addition to its art and literature, Greece also gave to Rome the learning which for hundreds of years she had been collecting.

Further Roman Conquests. The ambition for conquest led the Roman legions in all directions. In the northern part of Africa, they wiped out the great city of Carthage. In the east, we have seen how they conquered Greece. From Macedonia they pushed on through the ancient empire of Persia, down into Syria and to the shores of the Red Sea, until they finally conquered the great empire of Egypt.

The generals of Rome also led their armies through what is now Austria and Switzerland as far as the banks of the Rhine. All of the regions which now comprise France, Spain, and Portugal became subject to the Roman empire, whose ships and arms were everywhere irresistible. In 55 B. C., Julius

Caesar, the greatest and most famous of the Roman generals and one of the greatest soldiers in the world's history, invaded Britain and made it a Roman province.

The Roman Empire. By this time the Roman empire comprised the whole of Europe, except what is now Germany and Russia, all of southwestern Asia, and the northern coast of Africa. Through this tremendous region the influences of Rome were spread. She carried her laws and her ideas of government to the most distant parts of the known world, and these have remained to this day, with the ruins of their cities, as monuments to the memory of the greatest empire in the world's history. Like the vampire which sucks the blood of its victim, Rome took from her colonies the best they had, but it was her glory that she eventually returned what she took, multiplied a hundredfold.

Results of Roman Conquests. The relations between Rome, the capital and center of the empire, and her provinces was always very close. Wherever Rome penetrated, she built walled towns, and left an army and a governor to rule the land. She constructed roads over which her armies could march with ease, and these roads exist to-day. Trade was encouraged. New sections of country were settled by colonists, either Roman soldiers or people from other lands. In this way there was built up a community of interests which did much to bind together all parts of the empire into one strong whole.

Frequent intercourse between the capital and the outlying provinces resulted in an interchange not only of products, but of manners and mode of living. The civilization of Rome was strongly influenced by her contact with her subjects, and this civilization deepened and broadened and was spread over the whole empire. It was the boast of the Roman that "all roads led to Rome;" but in a larger sense it should be said that all roads led from Rome, and over them, as through great arteries, the invigorating lifeblood of enlightenment spread, carrying new vigor over the world.

We have seen the way Rome was influenced by Greek art and culture. From the east and from Egypt, she received science and medicine. In Palestine her armies came in contact with the vital force of Christianity, which—though at first scorned and crushed—at last conquered and made Rome its center and strongest ally.

The Government of Rome. In the early days Rome consisted of three tribes or families, each under the rule of one man. These men came together to arrange rules for the government of the community and to provide laws for the common good. Naturally these men were the elders of the tribes, and from the Latin word for old men, *senex,* was derived the name of the ruling body or *senate.* After a time it was inevitable that one man should seize all the power into his own hands and become a king. How this occurred it is impossible to know, but it was probably the result of the invasion of Rome by another people who brought with them the idea of monarchy.

The Kingdom. We know, however, that for 243 years, from 753 B. C. to 510 B. C., Rome was a kingdom with the senate also in existence. The last king was Tarquin, "the Proud." He obtained the throne by assassinating the king, his father-in-law. Then for fear that the senate might punish him, he caused several of the chiefs and senators to be killed. His cruelty and ambition made him deeply hated by the people and in the year 510 he was exiled with his entire family. By a decree of the people, there were to be no more kings in Rome.

The Consuls. Instead of a king, they chose two consuls, who jointly administered public affairs. In time of war, one of these consuls was chosen dictator with absolute power. But these consuls were chosen from among the noble or patrician families, and the common or plebeian class had no voice in the government. The plebeians composed the farming or laboring class and in times of war they made up the larger part of the army. While they were fighting, which was usually during the summer months, their crops were ungathered, with the natural result that the farmer-soldier was soon deeply in debt. Under the Roman law, debtors were sold into slavery, so the plebeians found themselves in a sorry plight.

In the year 492 B. C. this class demanded a representation in the Senate, and when this was not

THE ROMAN SENATE.

granted, they marched out of the city and refused to return until their demands were met.

The Roman Republic. The demands of the plebeians were finally granted, and tribunes were chosen to represent them. Thus the Romans established representative government with the two classes of citizens, rich and poor, each represented. From that time until the empire was established under Cæsar Augustus in A. D. 31, a period of over five hundred years, Rome was a republic.

During this period, she grew to power and made herself mistress of the world. The climax was reached under Julius Cæsar, who became consul and practically master of Rome. It was he who made her greatest conquests. When he returned from his expedition against the Gauls, he was made dictator and thus became king in all except name.

JULIUS CÆSAR
From a Roman coin.

He was even offered the crown, but he declined it. The fear that he would, however, revive the ancient kingship which was so hated, caused a number of conspirators to put him to death. In the year 44 B. C. he was suddenly surrounded in the senate by a band of conspirators, all of whom he had favored in one way or another, and was stabbed until he fell, pierced with twenty-three wounds.

The Emperor. With the death of Cæsar, the power which he held was divided among his rivals. The quarrels that arose among them created factions, which for many years fought with one another and almost broke up the empire. Finally Octavius, grandnephew of Cæsar, prevailed over all the others and became, at the request of the Senate, the sole ruler. He was emperor in all but name; he chose as his title the name of his great-uncle, and was called Augustus Cæsar.

The Decline of Rome. The days of the republic were over and Rome was again a kingdom. During the succeeding centuries her power gradually declined. One by one her provinces slipped away from her. In 395 A. D. the great Roman empire was divided into two parts: the eastern empire with its capital in Constantinople, and the western empire with its capital at Rome. During the next hundred years invasion after invasion by the barbarian hordes of the north crushed the western empire, until in 476 A. D., stripped of all her colonies, the ancient empire of Rome became the kingdom of Italy.

The Influence of Rome on Civilization. We have mentioned how the Romans built towns in all their conquered provinces and filled them with Roman soldiers and colonists. All these outlying sections were connected with the imperial city by wonderful military roads. The intercourse between the capital

THE ATTACK OF THE BARBARIANS AT ROME

and these settlements naturally resulted in the introduction of Roman customs and Roman ideas. With these came the idea of democracy, the right of every man to have a voice in the government, which is the basis of the Constitution of our United States.

The transplanted Romans desired to live in the same way in their new homes as they had lived in Rome. So they built villas, temples, baths, and theaters in the remotest provinces. They took with them their books, their sculpture, their household utensils, and, greatest of all, their laws. The code of Roman law is the basis of our laws, and their customs in law are the basis of our practice in law.

As they scattered through all parts of the known world, the Romans spread the culture which had originally been largely brought to Rome from Greece, and had been perfected and extended by the Romans themselves. The marauding hordes which came down upon Rome and her provinces took this civilizing influence back to the barbarians of northern Europe.

V

WESTERN EUROPE

SPAIN

With the fall of Rome, the western empire, which included all of what is now Spain, Portugal, France, and Britain, fell to pieces. In many of the provinces, the generals in command of the Roman armies revolted from Rome and declared themselves kings. In others, the Roman soldiers were called back to Rome to aid her in her battles with the barbarians and to take part in civil wars at home. The native barbarians seized the opportunity to regain control of their country, and the various leaders divided the land among themselves, crushing out all remnants of Roman power.

The Franks occupied the provinces south of the Rhine. Spain was first held by the Visigoths and then by the Moors.

The Moors in Spain. The invasion of Spain by the Moors marked the beginning of the fourth civilizing influence in Europe, succeeding the eras of Phœnicia, Greece, and Rome. The Moors came from the Arabian settlements across the Mediterranean on the northern coast of Africa. They quickly spread over the southern half of the Spanish peninsula and became its rulers. For over seven hundred years they remained a power, devoting their energies to the advancement of learning. While civilization in the rest of Europe lay under the cloud spread by the barbarian hosts, the Moors made steady progress in learning. They brought with them ideas and knowledge which grew under their care until, in after years, it spread north throughout Europe and the whole world.

Moorish Civilization. The Arabs, from whom the Moors were descended, had established great schools throughout the East, at Bagdad and other places. In Cairo, Bagdad, and Alexandria they had collected great libraries. The knowledge which they brought with them to Spain came from these sources, with the addition of what they received from their contact with Greece and Rome.

Whatever culture the Moors found, they seized upon greedily and applied themselves to its development. In the study of geography, medicine, physics, astronomy, and mathematics the Moors led the world. Our language still shows, in its astronomical and mathematical terms, the Arabian or Moorish influence. Such words as *algebra, alcohol, zenith,* the names of many stars, and our system of numbers remain to show this influence on the early culture of Europe.

Their treatises on geography and their works of travel are still valuable to-day. In medicine they had advanced far beyond any European knowledge. In fact, medicine was scarcely known in Europe before the time of the Moors. The other nations possessed some knowledge of the use of certain herbs, but depended largely for the cure of diseases on charms or offerings to their gods. But the Moors, through their study of botany, had acquired a knowledge of plants which enabled them to develop the science of pharmacy or mixing drugs.

In Spain these studies were pursued diligently. The Moors founded a university at Cordova which, for a time, was the greatest in the world. Here, with the help of their mystic and imaginative temperaments, they developed a literature which has been translated into many languages. In the seven hundred years of Moorish power, pupils came to Spain from all over Europe to study in the Moorish schools. There were fourteen academies or colleges and five large libraries, one of which contained 600,000 volumes.

The Check of the Moorish Invasion. When the Moors first invaded Europe, they met with little opposition. For twenty-one years their advance was unchecked. But in 732 at the battle of Tours their progress was halted by the Franks under Charles Martel. This defeat prevented the Moors from overrunning Europe and confined them to Spain.

FRANCE

The Franks. Two centuries before the Moorish invasion, a German tribe called the Franks had crossed the Rhine under their king, Clovis, and had subjugated the northern part of what is to-day France. Ten years later Clovis conquered much of what is now Germany. He then turned south again and conquered the Visigoths in the south of France, adding their territory to his previous conquests.

At his death, Clovis divided the country between his four sons, and they and their descendants continued to rule until 752, when Pepin united the four parts and laid the foundation of the kingdom of France.

Christianity and the Civilization of the Franks. During these seven hundred years, Christianity had been brought into the west of Europe with the Roman armies, and had obtained a considerable foothold. It was forced upon the people, as was then the custom. The rulers of that day generally gave the barbarians their choice between the adoption of the Christian religion and death. Often whole tribes were baptized at once. It may easily be imagined how much real change was produced in the wild tribes who were thus forced to abandon their ancient worship of trees, rocks, and the forces of nature which they considered as gods.

The continual state of warfare gave little opportunity for the spread of the Christian religion or of the other civilizing influences which, under the Roman rule, had been carried among these barbarians. Here and there throughout this vast region were scattered monasteries in which the monks kept up a feeble fire of learning. The priests, in the very face of death, made their way into the woods of Germany and preached the Gospel to the barbarous Saxons. But the great mass of the people knew nothing of the cultural side of life; they were busily engaged in preserving their homes from the continued inroads of the northern tribes.

Charlemagne. In the year 771 Charlemagne, the great-grandson of Pepin, succeeded to the throne of the Frankish Empire. He was not greatly different from the mass of his people, and in manners and ideas he was half barbarian.

In the very beginning of his career the new king found himself at war with the Lombards, who occupied the northern part of the Italian peninsula and whose king had ill-treated the Pope at Rome. Charlemagne soon defeated the Lombards and was invited by the Pope to visit Rome, where he was showered with gifts and honors. The magnificence, the civilization, and the power of the Church of Rome made a profound impression on his mind. He returned home filled with the idea of carrying the religion and the culture of Rome into Saxony and Spain.

The Spread of Christianity. Charlemagne immediately started to carry his ideas into effect. The Saxons vigorously resisted him, and Charlemagne found it necessary to carry out his purpose by force of arms. From the beginning of the war he adopted the Roman policy of military occupation. Wherever

CHARLEMAGNE

he made a conquest, he built a fortress or castle and left a garrison. By the side of each castle rose a church, and a priest always rode at the right hand of every Frankish chieftain. For years the Saxons resisted, but finally they were forced to submit. In the same way Charlemagne took away part of Spain from the Moors, and thus Christianity was established throughout western Europe, except in southern Spain.

The Growth of Civilization. By the year 800 Charlemagne had entrenched himself so strongly on his throne that he turned his attention from war and devoted his energies towards bringing to his people the learning which he had found in Rome. He looked with the greatest favor on scholars and teachers; he invited them to his court and made them his counsellors. He frankly showed his respect for them and acknowledged his indebtedness to them for their learning. Nearly all the great scholars of the time were at his court. Foremost among them was Alcuin, the Saxon, who was made director of a school which Charlemagne required his chief men to attend. He himself found time to study rhetoric, logic, geometry, astronomy, and the elements of theology.

Charlemagne required that schools should be opened throughout his dominion and sent teachers and priests to them to instruct the people. In these schools reading, writing, singing, and simple arithmetic were taught. As a teacher or a school became famous, scholars from distant parts traveled there to obtain the benefit of the instruction. Thus there rose a considerable band of strolling scholars, who helped to spread learning throughout the land.

The Death of Charlemagne. Charlemagne died in 814, but before he died, he divided his kingdom among his three sons, reserving to one of them the supreme power. This son was known as the king of France; his brothers became kings of smaller sections but owed their allegiance to him.

The educational activity stimulated by Charlemagne largely died out during the reigns of his successors, but its influence remained, to rise again in spite of the oppression of the rulers.

VI

BRITAIN TO THE TIME OF THE CRUSADES

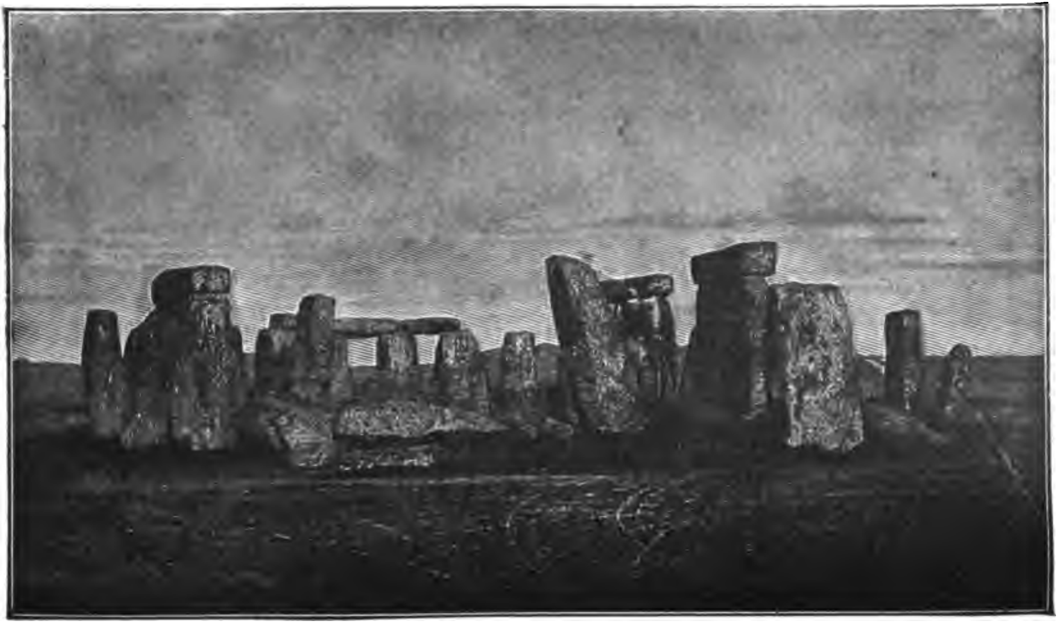
Early Inhabitants. At some early time of which we have no record, some of the inhabitants of Gaul, or France, as it is now called, sailed out across the channel and settled in Britain. Little is known of these early settlers except that they were divided into two tribes. One of these tribes took possession of Ireland and the northern section of the island, which is now Scotland. These people became known as the Picts and Scots. The other group of settlers called themselves Britons and occupied the southern part of what is now England.

The Phœnicians and the Greeks visited these islands and exported tin; but neither of these peoples made permanent settlements.

Some knowledge of the customs of the early Britons has come down to us. We know that their religion was similar to that of the Saxons, of whose conversion to Christianity we have just read. Their priests were called Druids, and they worshipped trees, fire, and other objects in nature, to which they offered human sacrifice. Strange ruins in several parts of England are supposed to be the remains of Druid temples. These consist of huge upright stones set in a rude circle with other great stones laid upon them. The most famous ruins are located at Stonehenge on Salisbury Plain. These ruins, with a few weapons and pieces of pottery, are all that are left to us of these people.

Roman Invasion. Britain really comes into history through the invasion of the country by the Romans under Julius Cæsar in 55 B. C. The Britons fiercely resisted the Romans, but though the invaders were far outnumbered, they were victorious. Their lack of discipline and their crude weapons of bronze made the Britons a poor match for the complete training in war and the fine weapons of the Roman legion. They were defeated with terrible slaughter and were forced to submit to Roman rule, giving many of their chiefs as hostages.

What Rome did for Britain. For four hundred and fifty years the Romans ruled Britain, and made many



THE RUINS AT STONEHENGE

changes for the better throughout the country. As was their custom, they built walled towns for their garrisons in various parts of the country, and connected the towns by roads. At the north, they built a series of forts and a wall across the island from the Solway to the Tyne to keep out the savage Picts and Scots of the north. Many of the dense forests were cut down. Marshes were drained and towns were founded, where the Romans built fine temples, baths, and public buildings. Mines of tin, lead, and copper were worked and the metal from them was sent to France and Italy. Some of the Britons learned to speak Latin, the language of the Romans.

The sites of their towns became the centers of population and remain so to-day. Every English town whose name ends in *chester* or *coln* (the Roman names for *camp*), such as Manchester, Worcester, Chichester, Lincoln, is the site of a Roman garrison town. Their roads still remain and are the main highways of travel. Remnants of the old wall in the north still stand, and relics of Roman houses, pottery, jewelry, and weapons are dug up in parts of England to this day.

The End of Roman Rule. About the year 410 A. D., the Romans were called away from Britain to repulse the raids upon Rome by the barbarian hordes from the north. They never returned and Britain was left to herself.

The Romans had found the Britons a strong race of warriors, self-reliant and independent. At their departure they left a race of slaves, unused to warfare, without unity and without leaders. For many years the Romans had defended the country from the attacks of fierce tribes, some from Scotland and some from over the seas. Left by their conquerors and rulers, the Britons found themselves unable to keep off their enemies. They appealed to Rome to aid them, but Rome needed all her soldiers at home.

The Coming of the Angles and Saxons. At length, less than one hundred years after the departure of the Roman legions, the country was overrun by hordes of Angles and Saxons from Denmark and north Germany. They drove back the Britons into what is now Wales and Cornwall, and established themselves in the southern and southeastern parts of the land. During the next two hundred years the country was torn by the conflict between the Saxon hordes and the Britons.

During this period originated the traditions of King Arthur and his Knights of the Round Table. The foundation of these stories probably rests upon the exploits of some patriotic and valorous prince who strove heroically to defend his country and to drive from it the invading hosts of Saxons. But in spite of the fierce resistance, by the year 510 the Saxons had practically conquered Britain, and for the next five hundred years they ruled the country.

Early Saxon Ideas of Government. The old Saxons had a considerable degree of democratic government. Their settlements were called *vills.* These

THE SAXONS LANDING ON ENGLAND'S SHORE

with the surrounding sections of land each constituted a *ton*. It is easy to trace in these names the origin of our village and town. Each *ton* elected a reeve, who with the head man and four assistants ruled the town in its ordinary affairs. Each *ton* sent a representative to the tribal council, called the witenagemote, which gave advice and counsel to the chief.

This crude form of government was introduced into England and is the foundation on which the present English government was built.

The Rebirth of Christianity. Christianity was brought into Britain during the latter part of the Roman rule, but after the departure of the Romans the natives returned to their heathen customs. In the year 596 a Roman monk, Augustine, went to England, as it was now called, with forty followers. The Saxon king at that time was Ethelbert, who had married the Christian daughter of the king of Paris. The king permitted Augustine to build a church at Canterbury, and in time he became a convert to Christianity, was baptized, and thousands of his people with him. Soon monasteries arose and the learning and customs of Rome were to some extent spread over the country.

Alfred the Great. The greatest of all the Saxon kings was Alfred the Great. At the age of seven, Alfred was taken by his father on a visit to Rome. The wonders that he saw there made a deep impression on the boy, and in after years, when he became king, they bore fruit in a remarkable manner.

Alfred was the youngest of four sons. After the death of his father, his three brothers reigned in turn. During this period, the Danes swarmed into England, and Alfred led the English armies against them. He showed himself to be a great general, and when his third brother was killed in battle with the Danes, Alfred was himself crowned king.

The new king was destined to have a reign of war and glory. Within a month after he came to the throne, he waged a terrible battle with the Danes which ended without a victory for either side. The Danes were so crippled by their losses, however, that they proposed a truce, which was accepted and kept for three years. But Alfred realized that there could never be real peace between himself and the Danes, and he spent the three years in preparation for the struggle which he foresaw must come. He built a fleet of ships which, though small and rude, was to render him signal service and may be regarded as the beginning of England's greatness on the sea.

At the end of the truce, war was renewed and continued with varying success for several years. Finally at the battle of Edington the Danes were utterly defeated. Alfred generously offered to permit the Danes to occupy the eastern half of England, on condition that they leave his kingdom in peace and that they become Christians. These terms were accepted, and for the remainder of Alfred's reign the country was at peace.

Alfred's Services to England. Great as Alfred was in war, he was still greater in peace. Few kings have done more for the welfare and happiness of their country. His visit to Rome had aroused in him a desire for knowledge, not only for himself but for his people. With this end in view, he began the study of Latin, the language of knowledge at that time.

He sent to Rome, to Paris, and to other centers of learning for books and teachers. He translated many Latin words into the Anglo-Saxon tongue. He established schools and impressed upon the youth the necessity of learning. Men were sent abroad for the purpose of geographical study. One such mission was sent to far-off India, and the travelers returned with the gems and spices of the Orient.

He improved his ships and built large numbers of them. At first, being unable to find sailors of sufficient experience among his own subjects, Alfred brought to England skillful captains from Friesland, where the sailors were noted for their seamanship. These men taught the English so well that when Alfred died the English fleet was the best on the western coast of Europe.

He modified and extended the forms of government which the Saxons had introduced into England. He retained the *vill* and the *ton*. Above the *ton* was the *Hundred*, which probably took its name from the fact that it was composed of one hundred families, or furnished one hundred fighting men. The master of the Hundred was the earl. Several of these Hundreds made a county, or shire, which held its courts twice each year. These courts were presided over by the shire-reeve, or sheriff, with whom were associated the nobles and bishops. Over all was the witenagemote, or assembly of wise men, which met at the command of the king and at his death chose his successor.

This form of government has remained in force, at least theoretically, through all the centuries from that early time to the present. The Constitution of the United States, with its various provisions for the people's share in the government, is not a new thing. It is the ancient government of the barbarian Saxons who invaded England fifteen centuries ago, with modifications to meet changed conditions.

Alfred also prepared a code of laws for the protection of life and property and took pains to see that the judges were fair and upright men. Whoever broke the law was severely punished, but no man was put to death for his crime. As a result, the respect for Alfred's law was so great that it was said, "If apples of gold grew beside the public highway, a man might walk the country from end to end and not dare to steal one."

In addition to all this, Alfred caused the rebuilding of desolated towns. He constructed fortifications and harbors; he caused surveys and maps of the country to be made; he organized a council which aided him in the care of the state; he brought into the country workers in the various trades and established many industries.

He had found England little more than a nation of barbarians, but he left it with a strong government in which every man, rich or poor, was protected and helped by an organized army and a strong navy. Through the introduction of schools, and the strong support he gave to the Christian religion, he laid the foundation for a great nation which was destined after many centuries to be one of the leaders of the world. It is little wonder that after his death in 901, and through the succeeding centuries, he should be referred to as Alfred the Great, and his reign should be counted the chief glory of early England.

England under the Danes. During the hundred and fifty years following the death of Alfred, England was torn by wars between the Danes and the Saxons. In the year 1017 the Danes under Canute completely defeated the Saxons and Canute was crowned king of England. He was already king of Norway, Sweden, and Denmark, and thus the entire Saxon and Danish area of Europe was for the first time united. At the death of Canute in 1035, the kingdom was divided between his two sons, who soon quarreled. They reigned only a short time and were succeeded by Edward, the son of the Saxon king whom Canute had defeated.

The Return of the Saxons. Edward was more interested in religion than in affairs of state, and on account of his quiet, holy life he came to be known as Edward the Confessor. He had spent much of his life among the Normans, and now he surrounded himself with Norman nobles. He realized that the Normans were superior in manners and culture to his rough, untutored countrymen, and a close intimacy arose between the English and the Norman courts. Many Norman scholars came over to England and spread the Norman culture over the land. Norman castles arose and the Norman influence soon was felt in all parts of the kingdom.

This state of affairs was strongly resented by the Saxons, and it was not long before the king was forced to drive all the Normans out of England. Edward died soon afterward, and as he left no heir, troubles arose over the question of the succession.

It was said that Edward had left a will giving his crown to his cousin, Duke William of Normandy. A large party of the Saxons, however, thought that it would be better to be ruled by an English king, and through their influence Harold, Earl of Wessex, was proclaimed king at London. His first act was to expel the Norman favorites who had again surrounded Edward in the later years of his reign. These Normans hastened home to Normandy and brought to Duke William the news of Edward's death and Harold's accession.

The Norman Conquest, 1066. William of Normandy claimed that Edward had promised to make him the heir to the English throne, and also that Harold had promised to aid him to secure it. He immediately made his plans for an invasion of England, and in the year 1066 he landed on the coast of

WILLIAM THE CONQUEROR AT THE BATTLE OF HASTINGS

Sussex with a great army. He was met by the Saxons under Harold at Hastings. At first the English were successful, but at the end of the second day of the battle they were routed and Harold was slain. William proceeded to London, captured that city, and was crowned king of England.

For several years King William was kept busy quelling Saxon rebellions in different parts of the country, but at last he subdued all the revolting sections. His success in overcoming the warlike Saxons and winning a kingdom for himself, gave him the title by which he has gone into history—William the Conqueror.

Having shown himself strong enough to win the land, he now showed his ability to govern it. He claimed that all the land of England was his, and he gave it to his Norman followers. He caused strong castles to be built in every corner of the land, and there garrisons were kept in readiness to suppress any attempt at rebellion.

The Feudal System in England. King William introduced the feudal system, which had already existed for over two hundred years in France and Spain. By this system, he was enabled to hold the country in a strong grasp. When a man received land from the king, he had to agree to provide the king with a certain number of soldiers, fully equipped, and to lead them in time of war. He might rent his land to tenants, who were bound to him under the same condition. Thus the king was always sure of a strong army ready to his call and fully prepared, at short notice.

England Becomes a United Nation. To the Saxons, the Norman conquest brought much distress, for the Norman nobles treated them harshly; but in the end the conquest was a great benefit to England. Heretofore the country had not been united. The great earls had been almost as powerful as the king, and as they were continually at war with each other, the common people had led a miserable life. Under the Normans, the king was all-powerful, and the nobles were required to live at peace with one another.

The English seldom traveled outside their own land, and were far behind the rest of Europe in trade, art, knowledge, and culture. The Normans brought to England learning and culture, which Europe now possessed to a considerable degree. At first they treated the English as a conquered race, but the two peoples soon became one. The combination of the high qualities of the Norman mind with the strength and solid qualities of the English character produced the mighty race which now peoples and governs a great part of the globe.

The Suppression of the Nobles by Henry II. When the firm hand of William was removed by his death in 1089, the nobles took to themselves much of the power which belonged only to the king. They made, as it were, little kingdoms of their lands, and from their great castles ruled the people in a harsh and cruel manner. They were continually waging war upon each other. This made it almost impossible for the people to cultivate the land; and furthermore the nobles ruthlessly destroyed the flocks and herds upon which the people were dependent for food.

At length there came to the throne a new king who was strong enough to curb the power of the nobles. This was Henry II, one of the greatest of England's kings. Henry destroyed many of the castles and forced the lords to obey the laws of the kingdom. He reformed the laws and enforced them against rich and poor alike, and under his rule the country began to prosper.

The common people were at peace, and trade grew between the towns and the country. Knowledge and learning spread abroad, and monasteries sprang up all over the country. Oxford College was founded and students went out from it to France and Italy to study law, art, and science.

Richard the Lion-hearted. The son of Henry II was Richard the Lion-hearted, whose place in history rests solely on the part he took in the crusades, of which we shall read later. In the ten years of his reign he was at home only a few months, and he spent this time chiefly in raising money for his expedition.

After Richard's death, his brother John became king. He was a worthless and cruel ruler, but in one way his reign was a blessing to England for all time.

The Magna Charta, 1215. John had taxed the people beyond all reason; he had robbed the churches, and had driven the monks out of the country by his treatment of them. He caused the assassination of many of the nobles who dared to criticize his acts. Finally the nobles felt that they could no longer endure the king's outrageous conduct. Under the leadership of Stephen Langton, Archbishop of Canterbury, they prepared a charter which stated that there were certain things the king should not do, and certain rights which he could not take from the people. They then sent to John, asking him to sign this agreement and stating that they were prepared to fight if necessary. He was greatly terrified and did not dare to refuse. So he called a meeting of all his barons and bishops at Runnymede, and there signed the famous Magna Charta.

This charter was very long and contained many provisions, but the most important were (1) that the king should never attempt to collect taxes, without first obtaining the consent of the Council of Barons; (2) that every man arrested for wrong-doing must be tried in court before a jury of his peers within a reasonable time, and if not found guilty must be set free. The provisions of the charter applied to the poor man as well as to the rich, the weak as well as the most powerful. It has been confirmed by more than thirty kings since that time and is still considered the most important document in the history of the English people.

The First Parliament. At the death of King John, his son, Henry III, was made king. The only occurrence of real importance in his reign was the calling together of the first Parliament.

Henry was more French than English, for he had been brought up in France and had surrounded himself with Frenchmen. This did not please the English barons, especially as the Frenchmen looked with contempt upon the English, and encouraged the king in extravagance. It cost a good deal to provide for all the desires of these visitors and Henry was soon in need of money. He promptly began to tax the people without regard to the provisions of the Magna Charta.

On account of this taxation, Simon de Montfort called a meeting of the Council of Barons, together with two representatives from each of the larger cities and two knights from every shire. These made the English Parliament complete. It was the first time that all classes of the people had been represented in the government. Though this Parliament did nothing of importance, it taught the people what they might do in time of need.

Our Interest in the Period. There are four important reasons why we are interested in the history of England during this period.

(1) The English people were largely responsible for the settlement of the colonies which afterwards became the United States. We are therefore naturally interested in the formation of

the English race—Britons, Saxons, Danes, and Normans.

(2) The town and village organization which was introduced by the Saxons is repeated in our own country.

(3) Representative government was originated in England by the Saxons, extended by Alfred, and finally developed into the first Parliament of Henry III.

(4) The Magna Charta is the foundation stone of the personal liberty of all English-speaking people.

VII

THE CRUSADES

Palestine. In the year 1095, there began all over Europe a movement which in its consequence was to prove a turning point in history. It was also indirectly to be the means of bringing a new world to the knowledge and the use of man. This movement was the crusades, which were an attempt to regain possession of Jerusalem and the land of Palestine from the Turks, who had captured it in 1076.

From the earliest days of Christianity it had been the custom for people from all parts of Christian Europe to journey to Palestine to visit the places held sacred by Christians. As early as the fifth century the number of such pilgrims was many thousands. Some remained in Palestine, but most of them returned, bringing holy relics with them.

The Arabs and Turks in Palestine. The Mohammedan Arabs invaded Syria in the sixth century and captured Jerusalem. They did not, however, molest the Christian pilgrims because they, too, held the city sacred. In the eleventh century, the Turks came from Central Asia and plundered all of Palestine. They treated the pilgrims with great cruelty and massacred many.

The Council at Clermont. All Europe was horrified at the accounts brought back by the returning pilgrims. Pope Urban II called a council of the Church dignitaries and the nobles of France and Germany at Clermont, in France, to consider what could be done. So many attended the meeting that it was held in the open air. Pope Urban delivered an eloquent address on the sufferings of the Christians. He told his hearers that it was their duty to forget their own quarrels and to unite in an effort to save the Holy City from the barbarous Turks. The people were deeply stirred, and as Urban finished his speech, they shouted, "It is the will of God." "Now, make that your battle-cry," said Urban.

To all who promised to take up the enterprise, the attending priests gave a cross cut from red cloth, which the pilgrims were instructed to wear on their breasts. From this cross came the name of the crusaders.

The First Crusade. From all parts of Europe, thousands hurried to take part in what was regarded as a Holy War, and in the spring of 1096 a number estimated at 275,000 had started for Palestine. They had no experienced leaders, and set out without supplies or even arms. Their fate may easily be foretold. The long marches over rough roads, through wild country, with no money with which to buy food, and frequently no food to be found, soon reduced their numbers. Only a small proportion ever reached the Holy Land, and most of these were captured and massacred by the Turks.

The Capture of Jerusalem by the Crusaders. The main army of the crusaders, however, was composed of nobles with their retainers. Under the command of some of the most noted military leaders of the time, they made their way towards Palestine in 1097. Jerusalem was reached in June, 1099. The city was well defended, but after a siege of six weeks it surrended. The crusaders drove out the Turks and elected Godfrey of Bouillon as king and Protector of the Holy Sepulchre. For fifty years there was peace in Jerusalem. Then a second crusade was undertaken to recapture the rest of Palestine, which the Saracens, as the Mohammedans were called, had taken from the Christians. This crusade was a failure.

The Third Crusade. Forty years later, in 1187, Saladin, the chief of the Saracens, recaptured Jerusalem. This led to a third crusade, whose leaders were among the most famous men of Europe,

GODFREY DE BOUILLON ENTERS JERUSALEM

including Richard the Lion-hearted of England. After their arrival in Palestine the leaders quarreled among themselves and separated, leaving only Richard to carry on the siege of Jerusalem.

Alone, he was unable to carry out his purpose, but though he could not defeat the Saracens, his valor and his character excited their admiration. Saladin made a truce with Richard by which, though Jerusalem remained in the hands of the Turks, the Christians were allowed to visit the city as much as they pleased. A strip of land was also granted to the Christians with the freedom of trade.

The next year Saladin died, his empire was broken up, and the Christians remained in peace in their possession of Palestine. Various other crusades were made, the last ending in 1270, two hundred years after the first began. The cost in money and men's lives was enormous, but the results of the crusades were far-reaching, though very different from what was intended.

Results of the Crusades: The Granting of Privileges to the People. The great feudal lords had been forced to sell much of their lands, in order to raise money to equip their troops and transport them to the East. For the same reasons, kings granted privileges to the people in return for the money they needed. With the ownership of land and their new privileges, the common people began to take a more important part in the development of the nations.

Commerce. A large number of ships were required to transport the troops and supplies. This led to a great increase in commerce, and to closer contact with foreign countries. The rise of Venice and Genoa are examples of this growth in commercial power.

Culture. Through the crusades, a vast number of men, who otherwise would never have left home, were led to travel in distant lands. They saw new cities, dress, houses, and customs. They enjoyed comforts and luxuries which were entirely new to them and were in many cases a decided improvement on their life at home. Naturally this awakened a desire for better conditions at home and led, in time, to a great trade between the East and the West.

The Revival of Learning. Though Europe was considerably advanced in manners of living and culture of a kind, it was chiefly that pertaining to knighthood. The contact with the Greek and Saracen civilizations gave the western Europeans a taste for literature and art and science which they carried home with them. In Constantinople they saw the refinement and magnificence of the eastern Roman empire. In Syria and Palestine they found many new forms of industry and art, including glass making and silk weaving. From the Moors they obtained a knowledge of gunpowder and artillery, of the making of wine, of better weapons, and other articles.

Navigation and Ship building. The art of navigation and ship building rapidly advanced, and trade between the Eastern and Western worlds greatly increased. The cities situated on the routes of the crusades, especially in Italy, soon acquired great influence and wealth through this trade. The old trade routes from the far East to the shores of the Mediterranean, which had made Phœnicia so great, were once more opened. Over these routes were brought silks and carpets, fruits, spices, wines, pearls, and ivory, to be sold to the merchants of Genoa and Venice, who found a ready market for them all over Europe.

The Division of Land. Trade increased throughout the country, and money became more common. This had an immediate result in giving to the poor man an opportunity to acquire money and purchase land of his own, instead of being the slave of another. Thus there arose a large body of freemen.

Schools. Some of the monasteries and schools established by Charlemagne in France and Germany and by Alfred in England were still in existence. These had not progressed very far, because the only people who desired an education were the sons of the lords and knights, and the kind of education they required was not gained in schools.

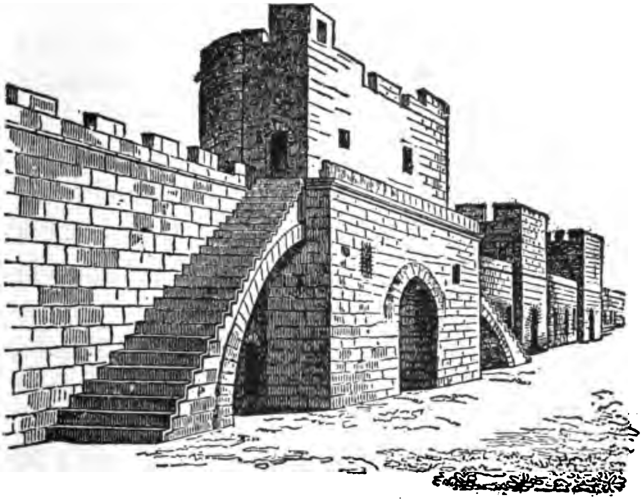
Now, however, all the good seed sown by the early Romans, by Charlemagne, by Alfred, and by the Moorish schools of Spain in the tenth century was fertilized by the new thought and the new desires which had been awakened through the crusades.

The religious enthusiasm which had caused the crusades spread all through the world, and by its teachings men began to turn from fighting to the more peaceful occupations of trade. The priests and monks, instead of concerning themselves only with religious subjects, became men of general learning. Great cathedrals arose, and became centers of thought. These cathedrals were long in building and were the product of the best architects and builders, who were always trying for new ideas. Thus a new style of architecture, different from the Roman and Greek, sprang up. In Germany it was the Gothic style; in France the Norman. The money to pay for the cathedrals was contributed by all classes of the people, for now all had a common interest in them.

Monasteries arose everywhere and they were both church and school. The monks became teachers. Books were few and costly, and the monks spent much time in copying and adding to them. Many of the books thus copied were very beautiful. They were written in the Gothic lettering, and were illustrated on the margins of the pages with pictures of birds, flowers, vines, and leaves painted in brilliant colors. Students came from all over the Christian world to study these books and to carry away the knowledge they contained.

Universities. Here and there a band of students gathered about some great teacher, and thus arose universities, each devoted to a special field of learning. Of these the greatest were the University of Bologna in Italy, Paris in France, Oxford and Cambridge in England, Seville in Spain, Heidelberg in Germany, and Vienna and Prague in Austria. From these centers the students wandered over the land, seeking knowledge at the different schools and teaching to support themselves.

The Rise of Free Towns and Democracy. By far the greater number of the men comprising the armies of the crusaders had come from the country outside the towns; they were retainers of the barons and knights. These men had no habit in life stronger than their duty to their lords, to whom they looked for support.



RAMPARTS OF A TOWN IN THE MIDDLE AGES

The men of the cities and towns, on the contrary, were dependent only upon themselves. They were merchants, traders, manufacturers, gardeners, each with a single occupation from which he drew support for himself and his family. These men were industrious and ambitious, in comparison with the more idle, shiftless element which comprised the retinue of the nobles.

They were soldiers, too; for the greed of the feudal lords forced the organization of town militia for self-protection. Each citizen possessed a coat of mail and a pike, or spear, and was expected to turn out for the defence of the town at a moment's notice, clad in his own armor.

Town Government. The affairs of the town were conducted by a town council presided over by a burgomaster and chosen by the people, but the authority of the town was in the hands of the whole body of citizens. They came together whenever any question of policy or management arose, and each citizen had a vote. Such a condition produced a love of liberty, and individual independence, and a determined opposition to any attempt at control from without.

The Guilds. Quite naturally the different trades in the towns drew together in order to protect their own interests against the other trades. In this manner grew up the town guilds, each composed of a single trade. These guilds later secured practical control of the cities.

The Grants of City Charters. The manufacturing was done in the towns, and to these towns the crusaders had to apply for war equipment for their armies. Thus much of the wealth of the barons flowed into the towns; when the crusaders returned, they found the towns rich, while they themselves were impoverished. They at once renewed their old habits of plundering the towns, but were met with unexpected resistance. The citizens had been forced, in the absence of the lords and their armed retainers, to protect themselves from robber bands, and had grown skillful in the art of taking care of themselves. Often the towns combined together against a common enemy. They could see no reason why they should give up their hard-earned wealth to support in ease the nobles and their crowds of retainers. They therefore rebelled and demanded charters of freedom.

In some cases the nobles were successful, but in the great majority of cases the charters were granted and the town became free. This was the beginning of a republican democracy and the birth of a citizen class, and a long step towards the downfall of the feudal system.

The Growth of the Power of the State. During the crusades, a very great number of barons, lords, and knights were killed or made captive. Their estates in many cases were left unprotected and were appropriated by the kings or by the great princes, who thus became more and more powerful. With the increase of their wealth and possessions, these kings and princes found it less necessary to depend upon the petty lords for their fighting men.

Instead of personal service, they demanded a tax in money. This money was used to improve the roads, to build bridges, and to maintain a standing army, which was paid and supported by the king and owed allegiance to no other man.

The towns and cities were glad to contribute to such purposes, because in this way trade and commerce were protected and wealth increased.

With the king's army came the king's law enforced by the army. The petty quarrels of the nobles, the depredations of the knights became fewer and fewer. The roads became safe for travel, private rights of person and of property were respected, and the people for the first time found themselves able to engage in peaceful pursuits. They grew accustomed to looking to the king for support and protection, while he depended upon the people for the means with which to provide his necessities. The unity thus brought about between ruler and people resulted in the foundation of the state. From this growth of common interest and national feeling arose the modern nations of France, Germany, Spain, Portugal, and England.

Our Interest in the Crusades. There are three important reasons why we so carefully study the crusades and their results.

1. They brought about the revival of learning, through the general contact of the people of Europe with each other and with the East, and thus brought culture to England.

2. They helped to break the power of the nobles.

3. They led to the rise of the common people to the position of freemen whose individual rights were recognized. This laid the foundation of the love for freedom and self-government which resulted in our own country's independence.

VIII

THE ERA OF DISCOVERY: PORTUGAL

While our interest is centered in England because her influence on our country has been the greatest, in order to understand clearly the history of the United States, we must know something about the other countries which sent explorers and settlers to America. We will now take a rapid survey of the history and explorations of Portugal, Spain, France, and Holland, and then go back to England and learn how she came to take so important a part in our history.

The Location of Portugal. We cannot read the story of the exploration of the world without amazement at the adventurous spirit of the people of a little country of Europe,—Portugal.

This little kingdom is situated in the southwestern part of Europe. On the east and north high mountains separate it from Spain. On the west and south is the Atlantic Ocean, which gives the country a seacoast of five hundred miles, which is less than the distance from New York to Charleston, South Carolina.

Since much of the land is mountainous and unproductive, it was natural that the Portuguese should try to find new countries from which to obtain food and wealth; and the mixture of races which made up the population, peculiarly fitted it for the adventurous task of exploring the unknown seas.

History and Government. According to the earliest knowledge that we have, Portugal was occupied by Celts. These people were conquered by the Phœnicians, who came from the extreme eastern shore of the Mediterranean and with great daring passed through the Strait of Gibraltar into the unknown sea beyond and settled in Portugal. These people were conquered in turn by the Romans. The Romans were driven out by wild tribes from the north, who in turn were conquered by the Moors. Finally the Moors were conquered by the inhabitants of Spain and from that time the Latin race ruled Portugal. *Latin* is the name given to-day to the people who live in Italy, France, Spain, and Portugal.

Not long after Spain conquered Portugal, that little kingdom became independent. Portugal was then governed by a king who had absolute power. Later this form of government was modified by the addition of a Parliament, or Congress, which assisted the king.

First Explorations. The Portuguese were a maritime nation for the same reasons which made the Phœnicians a nation of sailors. Portugal was a small country and not adapted to agriculture, save

SHIPS OF THE EARLY EXPLORERS

in small districts. Driven by the need of outside sources of wealth and food, the Portuguese became traders and visited all the countries along the Mediterranean. They even ventured out into the Atlantic Ocean, of which they knew nothing. They found the Azores Islands and the island of Madeira, almost one hundred years before Columbus discovered America.

Vasco Da Gama. It was not until five years after Columbus had made his discovery that a Portuguese made one of the most famous voyages in the history of the world. In 1497 Vasco da Gama sailed south from Lisbon along the coast of Africa, and rounding the Cape of Good Hope, found that it was possible to go to Asia by water. As a result, he opened the way for a vast trade between Portugal and the rich countries of southern Asia and the islands which lie to the south of it.

Brazil. Four years later, in 1501, a Portuguese discovered and claimed for Portugal its first and greatest possession in the New World—Brazil, which is now the largest republic in South America. Spain and Portugal had made an agreement that a meridian 370 leagues west of the Cape Verde Islands should be the dividing line between lands claimed by them as a result of their discoveries. Brazil lay east of this line of demarcation, as it was called, and according to the agreement belonged to Portugal. This vast territory remained a colony of Portugal until 1821, when it was established as a separate empire.

Our Interest in Portugal. We are interested in Portugal for three reasons.

1. The Portuguese were the first to venture out into the Atlantic Ocean, and thus they prepared the way for the discovery of America.

2. A native of Portugal, Vasco da Gama, in 1497 discovered that Asia could be reached by sailing around the Cape of Good Hope.

3. Portugal might have been among the founders of our own country, if it had not been for the agreement with Spain by which Portugal was compelled to restrict her explorations to countries east of the line of demarcation.

IX

SPAIN

While Portugal was sending her mariners out into the Atlantic Ocean to discover the Azores and the Cape Verde Islands and to explore the west coast of Africa, events were taking place in Spain which led up to the discovery of America.

The Location of Spain. The kingdom of Spain is situated east of Portugal. It is bounded on the north by the Pyrenees and the Bay of Biscay, on the south by the Atlantic Ocean and the Mediterranean Sea, and on the east by the Mediterranean Sea.

History. The Spaniards are of the Latin race with a mixture of Celtic blood, particularly in the people of the north. But like Portugal, all or part of this country was conquered in succession by the Phœnicians, the Romans, the Goths, and the Moors, each of whom left behind them traces of their occupancy of the country.

The Moors became the owners of a large part of Spain in the year 711 and for more than seven hundred years they ruled portions of the country. They possessed, as we have seen, a high degree of civilization and in learning, architecture, and industry were far in advance of the rest of Europe. Their cities were models of wealth and magnificence. Their buildings, of which the Alhambra is a type, remain to-day beautiful even in ruin.

Of their industries, the most important were the manufactures of silk, leather, and silver work. In Cordova alone there were 16,000 silk looms. The silver mines of Spain were developed and worked by the Moors, and yielded much treasure. In their commercial ventures, they brought into Europe the furs of Russia, the spices of Persia, the fruits of Arabia, and the fine cutlery and arms of Damascus.

Although secluded from the rest of the inhabitants of the peninsula, the Moors exerted a strong influence on the country, and their expulsion took from Spain over a half million of her most valuable inhabitants.

The rest of Spain was divided into several small kingdoms. Finally the two most powerful of these kingdoms were united by the marriage of Ferdinand, King of Aragon, and Isabella, Queen of Castile.

The combined power of these two kingdoms drove the Moors out of Spain in 1492.

Government. These two monarchs established practically the same form of government which we now find in Spain. The king was aided in his rule by a cabinet which is similar to the Cabinet of our President and which the king himself selected. Corresponding to our Congress, there was a Cortes composed of two bodies of men. One of these, called the Senate, was made up of men who were not elected like our senators, but who were of so-called noble birth. They inherited from father to son the right to be a senator. The lower house of the Cortes was composed of men elected from each district in the kingdom, who owned a certain amount of property. They were not elected by all the people in their district, but only by those who also owned a certain amount of property.

The Cause of Exploration. We have seen that the Spaniards finally drove out the Moors. To do this took many hundreds of years of almost constant fighting. During this time the people of the country became accustomed to war and the rich men were all soldiers. The result of this condition was a love for excitement and adventure, which after the conquest of the Moors could find outlet only in lawlessness. This spirit made the Spaniards ready to seek adventure in other lands.

The last part of this war was carried on at great expense and the king and queen spent a large part of their wealth for this purpose. Many of the nobles were ruined by what they spent in raising troops. So in 1492 when the war was ended, they were anxious to secure wealth from other lands, especially the East Indies, from which they had heard tales of great riches.

Marco Polo. Many years before this time, a Venetian merchant, Marco Polo, had traveled through Asia to China and brought back stories of great wealth in gold, silk, spices, and jewels. But it was a very dangerous and expensive trip to go by land to such distant countries.

Columbus. The desire to reach these supposed sources of great wealth, led to many speculations as to the best method of communication. Finally Christopher Columbus came to Spain. He was an Italian who had had a great deal of experience as a sailor on the Mediterranean and in the employ of Portugal on the Atlantic Ocean.

He thought that by sailing west on the Atlantic Ocean, he could reach Asia and the East Indies. He was laughed at; but through the help of Isabella, who was very religious and anxious to convert the natives of these distant lands, he was able in 1492 to sail with three vessels out upon the vast ocean.

The Discovery of America. Imagine a little company of men sailing out into an unknown ocean in a boat much smaller than our ferryboats of to-day. This is what Columbus did. Sailing, sailing, sailing, day after day for five weeks, and resisting the pleas of his sailors to return home, he finally reached land on October 12th, 1492.

He first landed on an island that he called San Salvador, which is one of the West Indies. After he had visited many neighboring islands, he returned to Spain, where the king and queen loaded him with honors.

Further Voyages. Columbus made three more voyages in which he discovered other islands and finally, it is believed, landed on the shores of South or Central America. But Spain did not appreciate his services. Through jealousy and false accusation, he was imprisoned and dishonored. In the end he died a poor and broken-hearted man. Each year we celebrate October 12, the date on which Columbus landed in the New World, for we realize that by his perseverance, bravery, and sacrifice he showed the way to America and made possible the exploration of the vast continent on which we live.

Vespucius. A few years after the first voyage of Columbus, Americus Vespucius, another Italian, sailing under the flag of Spain, explored the shores of Central America and the northern coast of South America. The name *America* was given to the New World in honor of this explorer.

Results of the Discoveries. When the news of Columbus's safe return to Spain spread over the country, it was thought by all that the land he had found was a part of the East Indies or Asia. Many adventurous Spaniards who had led the life of soldiers, immediately wished to win their fortunes in the newly discovered land. The king, who claimed ownership of all the land found by Columbus, gave commissions to his favorities, authorizing them to send out expeditions to conquer and colonize his new dominions.

Those who took part in these expeditions had just one desire—wealth. They landed and made settlements in the West Indies and along the coast of Central America, and tortured the Indian inhabitants to learn where they could find gold. Thus they sowed the seed of hatred which has lasted for centuries and has made the name of Spain a byword for tyranny throughout Central and South America.

Balboa. From one of these settlements in Central America, Balboa, a Spanish adventurer, in 1513 went west and from the top of a mountain looked down upon the Pacific Ocean. He was the first white man to see this, the largest ocean in the world.

Ponce de Leon. During the same year Ponce de Leon, a Spanish gentleman, landed on the coast of Florida. He was the first known white man to visit what is now the United States. He made a second visit to Florida, but lost his life as a result of a battle with the Indians.

Magellan. By this time the world knew that Columbus had not discovered the East Indies, but it was still the ambition of the Spaniards to find some route to the East by sailing westward. In 1519 Ferdinand Magellan, a Portuguese in the employ of the

Spanish king, was sent out to find this route. He sailed south along the coast of South America until he reached what are now called the Straits of Magellan. After spending several months in conflict with the natives, he sailed west over the Pacific Ocean Finally he reached the group of islands now called the Philippines, where he was killed in battle. His followers kept on westward, and three years after they had left Spain, they returned home again by way of the Cape of Good Hope. This was the first voyage around the world. It proved for all time that the earth is round, and determined the relative positions of Asia and America.

Cortez and Mexico. While Magellan was sailing out on the Pacific Ocean, rumors had come to the Spanish settlements regarding the vast wealth of the inhabitants of Mexico. Cortez, a rough soldier, organized an expedition to conquer the great Mexican or Aztec empire. He landed at what is now the city of Vera Cruz and step by step fought his way to the City of Mexico.

He was welcomed by Montezuma, the emperor, who was awed by the succession of victories which Cortez had won. At this point Cortez was interrupted by the arrival of a Spanish force which had been sent to arrest him and bring him back to Cuba. He had little trouble in winning a victory over them and once more turned his attention to the City of Mexico. He captured this city and completed the conquest of the country.

For twenty years Cortez ruled Mexico as governor, but from the time he landed at Vera Cruz until he returned to Spain, his career was one of continuous murder, torture, robbery, and oppression. His one ambition was wealth, and to gain this end, he crushed the people and forced them to give up the vast accumulated wealth of one of the earliest civilizations in the Western Hemisphere.

Pizarro and Peru. The wealth which Cortez found in Mexico stirred afresh the cupidity of his countrymen. One of these, Francisco Pizarro, led an expedition to Peru, on the Pacific coast of South America. This country was equal to Mexico in wealth and civilization. Pizarro's experiences were similar to those of Cortez. The natives, with their bows and arrows, could not resist the guns of the Spaniards.

Pizarro conquered the country, killed its ruler, the Inca, and followed the example of Cortez in robbery and oppression. He was finally killed by one of his own countrymen. He had added largely to Spain's possessions, which finally extended the length of the western coast of South America.

De Soto and the Mississippi. Among Pizarro's followers was Ferdinand De Soto, who was afterwards governor of Cuba. The hope of gold induced him to lead an expedition, in 1539, into what is now the southern part of the United States. He landed in Florida and explored the country as far west as the Mississippi River.

Like other Spaniards, his desire for wealth led him to commit many cruel acts against the natives. The result was that he and his men were forced to fight every inch of the way. When he finally discovered the Mississippi River, his force was very much reduced by death from battle and hardships. De Soto himself died at this point and was buried in the great river. His few remaining followers, after suffering the greatest privation, finally reached a Spanish settlement in Mexico.

Our Interest in Spanish Exploration. There are four reasons why we are interested in the history of Spanish exploration and settlement in North America.

1. Columbus, employed by Spain, discovered America.

2. The Spanish settlements in South America, Central America, California, and Florida have handed down the influence of the Latin race to this day.

3. The Spaniards were guided in their conquests by desire for wealth. As they found the precious metals only in Mexico and South America, they did not settle north of Florida. They left to other races the greater part of the North American continent.

4. The Spaniards disregarded all natural advantages of the country, save gold and silver, and their cruel treatment of the natives won the hatred of every race they conquered. As a result, Spain has now lost all her former vast possessions in the New World.

X

FRANCE

Location and People. France is situated in the western part of Europe. On the east are the Alps, and on the northeast Germany and Belgium, the home of the Teutonic races. On the north and west are the English Channel and the Bay of Biscay. On the south is Spain. The people are of the Latin race, but like the Spaniards, the French have the blood of many races in their veins. Originally the country was occupied by the Celts; then came the Romans, the Goths, and the Franks, who formed the backbone of the present French people.

History and Government. From the time of the overthrow of the Roman power, France was composed of a number of petty kingdoms, each of which was an absolute monarchy,—that is to say, the kings ruled without restraint. After the crusades, France became for the first time one country. The king was still absolute, but there was an assembly called the States General, which met only when the king commanded, and even then he did not always obey its decrees.

The common people had no share in the government. They were oppressed by the nobles, who owned most of the land. Each noble had absolute power over the people living on his land. They were little better than slaves. Some of these nobles were so powerful that the king was often compelled to fight to retain his throne, and sometimes he was deposed and one of the nobles was put in his place. This resulted in almost continuous civil wars, in which the common people suffered most of all.

In addition to these civil wars, there were wars with foreign countries, mostly with England. Normandy, a part of France, had been conquered by the Norsemen. In 1066 William, Duke of Normandy, conquered England and became its king. He retained in his family the possession of the duchy of Normandy, which for a long time remained a cause of strife between France and England. From 1333 to 1453 these two countries were almost continually at war. At times England possessed most of France, but finally she was practically driven out of the country.

As these wars with England were fought in France, all the resources of France were turned to defense. There was almost no commerce by sea. Consequently France was not ready to compete with Spain, Portugal, and England for possessions in the New World until a later date.

First Explorations. In 1524 Francis I of France, prompted by jealousy of Spain's successful explorations, sent out an Italian sailor, Verrazano. He sailed along the eastern shore of North America, entered the harbors of New York and Newport, and probably continued his voyage northward beyond

Nova Scotia. Ten years later Jacques Cartier discovered the St. Lawrence River. On the shores of this river he attempted to make the first French settlement in America, but the harsh climate and his inadequate equipment resulted in a complete failure.

Religious Differences in France. A civil war in France between the Catholic party and the Huguenot or Protestant party, led to the emigration of a large number of Huguenots to various countries. In 1562 an attempt was made to settle Carolina, but again the settlers were poorly equipped and had to abandon the idea. Two years later a settlement was begun in Florida, but the Spaniards killed all the French. This massacre was avenged a few years later by a private expedition from France which attacked the Spanish settlements and slew the inhabitants.

The civil wars in France culminated in the massacre of St. Bartholomew's Day in 1572. This event was caused by order of Charles IX, who was actuated rather by natural cruelty and jealousy of the power of some of the Huguenots than by his religious zeal. He also issued an order forbidding the Huguenots to emigrate. No further efforts, therefore, were made by them to settle in America at that time.

The Beginnings of Canada. From 1504 to the end of the century no serious attempts were made by the French to settle the New World. But the fishermen who lived along the coast of France often sailed west to the fishing banks of Newfoundland, caught cargoes of fish, and returned to France. Finally under Henry IV, civil war in France came to an end, and the king became interested in obtaining a share of the New World for France. Because of the reports of the fishermen, he was especially anxious to

MARQUETTE DESCENDING THE MISSISSIPPI

control the lands near which the great fishing banks lay.

Under a grant from the king, Sieur de Monts in 1603 founded the settlement of Port Royal in Nova Scotia. The next year Samuel Champlain founded the city of Quebec on the St. Lawrence River. He explored the whole region, going south into what is now New York State, and discovered the large lake which is named after him.

Further Explorations. From this time the French pushed farther west. Most of the explorations were made by French missionaries who endeavored to convert the Indians to the Christian religion. Foremost among these were Father Marquette and Father Joliet, who descended the Mississippi as far as what is now the state of Arkansas.

LA SALLE

The most complete explorations were made by Robert La Salle from 1669 to 1682. He explored the Ohio Valley and descended the Mississippi to its mouth. His efforts at colonization were unsuccessful, but he claimed for the king of France a vast territory including what is now the Dominion of Canada and all the central part of the United States.

The Development of the French Colonies. The valuable fur trade in Canada brought over large numbers of Frenchmen, who went out into the wilds and intermarried with the Indians. Many trading posts were established and around them grew up cities, as at Vincennes, Detroit, New Orleans, and Mobile.

Thus France established a vast domain, which was most thickly settled along the St. Lawrence River, where the cities of Quebec and Montreal flourished. It was from these places that the French made their attacks on the English colonies. The territory which France settled was largely nonproductive, except in furs and fish, and the climate was harsh. The poorer people of France had been, as we have seen, crushed by oppression. They lacked the independence and initiative necessary to insure permanent settlements that were strong enough to stand without help from the mother country.

Our Interest in the French Settlements. These four points in connection with French settlement in America interest us in studying United States history:

1. The northern part of the continent was settled by the French, who have left their trace among the inhabitants of northern New York, Vermont, New Hampshire, and Maine.

2. They settled also the lower part of the Mississippi Valley, and their influence may be seen to-day throughout the state of Louisiana.

3. France had a strong hatred of England, because of the wars in Europe between the two countries. This feeling led to continual strife between the colonies of these two nations, even when there was no war in Europe.

4. The character of the French settlers was such as to prevent concerted action and independence.

XI

HOLLAND

Residents of New York City have a right to be proud of the fact that their city was founded by men from "plucky little Holland." With a population, even to-day, smaller than that of New York City, this little country surrounded by envious neighbors has preserved its independence.

The Location of Holland. Holland, or the Netherlands, is situated in the western part of Europe. On the north it is bounded by the North Sea, the arms of which run back into the country and are held in check by a famous series of dikes. On the west, during the era of discovery, were the German nations, who have always looked with covetous eyes upon their rich little neighbor. On the south was France.

Its History. Holland was originally as much Gallic or Latin as its southern neighbors, but by its mixture with other races, the Teutonic strain has now become predominant. This was one of the few nations of southern and western Europe whom the Romans did not conquer. The people of Holland were allies, not subjects.

For five hundred years from 750 A. D., Holland was subject to the French king. The Dutch (as the natives of Holland are called) were then made subjects of various princes and dukes who owed allegiance to the king of France. In 1555 Holland passed to the control of Spain. Up to this time the inhabitants, in contrast to those of other European countries, were not heavily taxed and were able to make great progress in the development of their industries and commerce.

Under the rule of Spain, there was continuous fighting because of the differences in religion. The horrors and sufferings of the people under the persecutions of Spain were beyond description. But under William of Orange and his son Maurice, the Dutch were able to hold their own.

In 1609 a truce for twelve years was declared. It was during this period that the Dutch settled New Amsterdam, now New York. At this time they also built a large fleet which was of great value when the war with Spain was renewed. By means of this fleet, they laid the foundations of the wealthy Dutch colonies in the East Indies, made inroads on the Spanish possessions in South America, and gained a foothold in Brazil.

Finally in 1648 Spain recognized the independence of Holland. But war with England followed, and the Dutch were defeated. War with Portugal resulted in the Dutch being driven from Brazil. In 1664 war broke out again with England, but it lasted only a short time. In 1672 war was again renewed, this time against England and France. By cutting the dikes and flooding the country, the Dutch drove back the French.

In 1677 William, Prince of Orange, and the ruler of Holland, married Mary, daughter of the king of England. Eleven years later William and Mary ascended the English throne. With a few exceptions, Holland has been at peace ever since.

Government. After Holland became independent, the States General, or Congress, ruled the land under a stadtholder elected by themselves who sometimes assumed absolute power. In fact, except when under the rule of Spain, the Dutch have always had a representative form of government.

Henry Hudson. In 1609 during the truce with Spain, the Dutch sent Henry Hudson, an Englishman, to find a northwest passage to India. He sailed into New York Harbor and some distance up the Hudson River. When he returned to Holland, he gave such glowing accounts of the country that the Dutch, in 1614, settled on Manhattan Island. They called the settlement New Amsterdam.

The Success of New Amsterdam. From the first, the settlement was a success. Religious persecution at home drove many settlers to the new country, and others were drawn to it by the rich fur trade. They pushed out in every direction. In 1623 they had established a trading post at Fort Orange, now Albany; and at Fort Nassau, near Philadelphia; and they had a post as far east as the Connecticut River. Here and there through the regions that are now New Jersey, Long Island, and Connecticut, little settlements sprang up.

NEW AMSTERDAM

In 1623 Peter Minuit, the Dutch governor, bought Manhattan Island from the Indians for twenty-four dollars' worth of beads and other trifles. This honest act showed a very different attitude toward the Indians than that of his successors. Sir William Kieft in 1643 attacked the tribe of Hackensacks across the Hudson and massacred more than one hundred men, women, and children. This brought on a war with the Indians, which lasted two years and did much to endanger the lives of the settlers scattered through the wilderness.

Governor Stuyvesant. The greatest prosperity of the colony dates from the arrival in 1647 of Governor

PETER STUYVESANT

Peter Stuyvesant, who was a very energetic and resolute man. He made a treaty with the English, preserved peace with the Indians, and tried in every way to encourage trade and agriculture, as well as to induce new settlers to join the colony. The people who had been driven to New Amsterdam by their love of liberty, were anxious to share in the government, but Stuyvesant, being somewhat of a tyrant, refused their demands.

Conquest by the English. During Stuyvesant's rule, the English set up a claim to the territory, and Charles II granted it to his brother James, Duke of York. A fleet sent out by James in 1664 appeared before New Amsterdam and demanded that the fort and town should be given up to the English authority. The people, hoping to enjoy under the English the privileges refused by Stuyvesant, decided to surrender. The governor was very angry and determined; he held out until the place was actually in the enemy's hands. Thus, New Amsterdam became an English town and was named New York, after the duke of York.

In 1673 the Dutch, as we have seen, were at war with England. They sent over a fleet and for fifteen months they occupied the colony again. At the end of this period, it was again taken by the English and it remained an English colony up to the Revolutionary War.

Why We Are Interested in Holland. 1. The city of New York was founded by the Dutch in 1614.

2. Because of Holland's wars with England, the Dutch lost their colony.

3. In New York City there are many traces of Dutch occupation: Wall Street, so called because of

the wall which the Dutch built across the island; the Battery, where Fort Amsterdam stood; the Bowery or "Bouwerie Lane," which was the main street; and many Dutch houses, still standing, especially in Flatbush.

4. The energy and enterprise of the Dutch assured the success of the colony, and their spirit has come down to us. From 1500 people in 1664, the city has grown until it has nearly 5,000,000 inhabitants to-day.

Summary. We have now seen how South America was divided between the Spanish and Portuguese; how Central America and Mexico were conquered by Spain; how the West Indies were largely occupied by the Spanish; how Florida was explored and settled by the Spanish; how Canada and the great Mississippi Valley, including Louisiana, were claimed by France; how the Dutch won and lost New York.

The Portuguese brought to their colonies the influences of the Latin race. They were induced to develop their colonies by a desire to extend their commerce. The Spaniards also brought to their colonies the influence of the Latin race. But Spain acquired her new possessions solely for the purpose of extracting wealth, and her treatment of her colonies was so harsh that they were never so prosperous as the colonies of other nations.

France brought to the New World the combined influence of the Celtic and Latin races. The French came to this country through jealousy of the possessions of Spain and England, and through a desire to spread their religion.

Holland brought the influence of the Teutonic race to New York. The Dutch came here largely from a desire for religious freedom, but also because of their instinct for commercial progress and extension.

XII

ENGLAND TO THE ERA OF DISCOVERY

We have already traced briefly the history of England and its rise from a condition hardly better than barbarism to a strong nation. We saw how first the Romans, then the Saxons and Danes, and finally the hardy Normans invaded the land and how each left some strong mark of its influence upon the people. We saw also the rise of a spirit of independence and a love of liberty which became fixed in the Magna Charta.

The same conditions which we traced as resulting from the crusades in Europe had affected England also. She was torn by civil wars, and harassed by attacks from without, and had emerged a united people. The old claims of the house of William the Conqueror to parts of the territory of France caused many wars between England and France. The spirit of liberty which had been planted in the English by the hardy Saxons and Normans continued to grow, and to throw out barriers against the power of the king.

The events of the thirteenth and fourteenth centuries need not be enumerated here, except to note that in power, trade, and enlightenment, England continued to advance.

The event which claims our attention now is the change in the form of religion which occurred during the reign of Henry VIII (1509–1547), and to do this we must turn for a moment to the continent of Europe.

Martin Luther and Protestantism. In Germany there occurred a religious revolt, led by a monk named Martin Luther. It began in a disagreement with the Church of Rome; before it was ended, a large body of people separated from the church. The revolt spread into Switzerland, Holland, and France. It is known as the Reformation, and those who took part in it were termed Protestants.

Religious Differences in England. King Henry of England was a man of stubborn will. Several times, by his acts, he caused the Pope to remonstrate with him and even to threaten him with the wrath of the church. For instance, Henry claimed that the great English monasteries had too much power and wealth and he ordered them to give up part to the state. Upon their refusal, he destroyed their property.

These and other acts of the king finally resulted in his leaving the Catholic Church and forming a new church, of which the king of England was the head instead of the Pope. This new form of church was made the religion of the state, and the struggle between the new and the old was destined to cause many bloody scenes in England.

Henry VIII died in 1547. He was succeeded first by his son Edward, who reigned six years and who by edict completely separated the English church from Rome, and then by his daughter Mary.

Mary's most ardent desire was to restore the Catholic faith, and in furtherance of her plan she married Philip, King of Spain. During the five years of her reign, there were severe religious quarrels which caused great bitterness and much loss of life.

The Reign of Elizabeth. The reign of the next sovereign of England, Queen Elizabeth, stands forth as one of the most brilliant periods in England's history. Her first act was to reënact King Henry's laws concerning religion. All clergymen and government officers were compelled to acknowledge the sovereign as head of the Established Church, and its places of worship were the only ones that the people were allowed to attend.

There were now in England three forms of religion: the Catholic, the Established Church, and the Puritans. The Puritans were a sect who objected to the formal side of the service in the Established Church. From these three elements arose the discord which explains much of English history for the next hundred years.

England on the Sea. England was now a great maritime power. Her ships sailed every known sea and were found in every port. In 1497, sixty years before Elizabeth came to the throne and after the discoveries of Columbus had thrilled the world, the

QUEEN ELIZABETH

Cabots sailed from England to America. But as they found neither gold nor silver, nor other articles of

SIR WALTER RALEIGH

trade on the bleak New England coast, little attention was paid to their discoveries.

Now, however, the success which had crowned the explorations of Spain and Portugal and the wealth which these two countries were gaining from the New World, awakened the desire of England for a share of the spoils. Under the leadership of Sir

Walter Raleigh, in 1585 and 1587 unsuccessful attempts were made to settle in Virginia. Sir Francis Drake sailed around the world, harrying Spanish shipping and plundering Spanish settlements.

The Conflict Between England and Spain. It is likely that England would have taken much more interest in the New World had she not been so busily engaged at home at this time. The fact that Spain had become dominant in the New World would have been an incentive, for England and Spain were at war. Since the Spanish under Philip had aided Mary in her attempts to reëstablish the Catholic religion in England, the two countries had not been on very friendly terms. England, too, had aided the Netherlands in their revolt from the cruel domination of the Spanish.

The Armada, 1588. When Elizabeth revived Protestantism, Philip of Spain took upon himself the task of invading England. He intended to drive Elizabeth from the throne, and to restore the old religion. With this end in view, he organized a great army and built a huge fleet to transport it. So complete were the preparations and so formidable the squadron, that it was called the Invincible Armada.

The English immediately prepared to resist invasion. Their fleet was put under the command of Admirals Drake, Hawkins, and Frobisher, and set out to meet the Armada. In the battle many of the Spanish ships were sunk, others were captured, and the remainder of the fleet started back to Spain.

THE ENGLISH ATTACK ON THE SPANISH ARMADA

But a severe storm destroyed most of the ships, and only a few survived to bear back to Philip the story of the utter ruin of his splendid fleet.

During the war that followed, the English ships attacked the coast settlements of the Spanish in America. They captured many of the Spanish treasure ships which regularly sailed from America with cargoes of gold and silver.

The Beginning of English Settlements in America. The success of the Spanish in their colonization of the New World now aroused the English to the possibilities of America. Following Raleigh's attempt to make a settlement, several expeditions set out at different times from England to form new colonies in the lands beyond the sea.

The Puritans. About the time of the coming of the great Armada, the Puritan movement began to attract the attention and awaken the anxieties of Elizabeth. The Puritans were rebels against the authority of the English Church. They claimed the right to study and to interpret the Scriptures, and to worship in their own way. Elizabeth would not allow this, nor would her successor, King James I.

From time to time the Puritans were violently persecuted. At length many of them left England and took up their residence in Holland, which had now achieved her independence from Spain and was a republic with complete religious freedom. How the Puritans finally came to America is a story that need not be repeated here.

Literature. We have noted at some length the growth of the independence of the English in matters of religion, as well as in government. Their greatest advance, however, was in their literary splendor. The latter half of the sixteenth and the beginning of the seventeenth centuries was a period unsurpassed in the history of the world in intellectual activity.

Before this time there was scarcely a trace of literature in England, beyond the work of Chaucer. Now there burst upon the world an army of mental giants, and in every form of literary composition there appeared men of genius, whose work stands today at the very pinnacle of greatness. During this era the English language reached its perfection. This was the age of Edmund Spenser, the author of *The Faery Queen;* of Shakespeare, the greatest poet and dramatist the world has ever known; of Francis Bacon, the philosopher, Ben Jonson, the scholar and poet, and a host of others.

England's Rise to Commercial Greatness. In trade and commerce, England was rapidly growing. She had learned to manufacture woolen goods, and Manchester and Sheffield were centers of iron factories. The destruction of the Spanish Armada had left England the strongest sea power, and her ships were ever seeking new markets and bringing in new goods to England. Tobacco, maize, mahogany, and potatoes first became known in England during this time, and these, with the many other new articles of trade, increased England's commerce.

We close this rapid survey with one instance of the new conditions brought about by the changed ideas of the time.

The Poor-Law. "The poor are always with us," and this was as true in the seventeenth century as it is to-day. Men who had been maimed in war, or were too old or feeble to work, had to beg or starve. There were severe laws against beggars who were strong enough to work, and hundreds of these were hanged every year; but this did not help the men who were willing but unable to work. Elizabeth changed all this by enacting the poor laws, by which the people of every town and district were required to look after their own poor people and old people, and to provide homes and food for them.

Nothing else could so well illustrate the progress of civilization and enlightenment through which England had passed, or typify so perfectly the new viewpoint of mankind. The civilization of a nation is measured by the extent to which the general welfare of all the people is considered. In the savage tribe, might is right, and the strongest men secure the most and the best, while the weak are cast aside. The English, like all other peoples, had passed through this stage, and through the influence of education and of religion had come to a realization of the dependence of one man upon other men.

England's Interest in the New World. The Spanish and the Portuguese confined their attempts at colonization to Central and South America. The continent of North America was left to be settled principally by England and France, and for very different reasons from those that influenced the colonizers of South America.

France at first was actuated by a desire to secure for herself a portion of the new land. The later explorers and settlers, however, came to America for very different reasons: some to bring to the natives the benefits of the Christian religion, and others to engage in the fur trade and the fisheries.

The English, on the other hand, came almost solely in order to make homes for themselves, and to secure freedom of thought and worship. The story of the English colonies must be left for a later period. We can only point out here that from the very first these colonists set themselves to home-making and the development of the country. They brought the knowledge, culture, and industry which England had accumulated, and spread them in the new land.

They built for permanence, and in their building they used the wood of the tree of knowledge and the mortar of freedom. It is little wonder that these walls have stood and grown stronger through the centuries, and that the seed sown in the new soil has sprouted and grown mightily, until to-day the nations of the earth eat of its fruit.

Summary. The influences which we have traced from the Phœnicians to the Greeks, thence to Rome and throughout the known world, found their fullest development on the Atlantic shores of Europe. The wave of civilization had there struck against the apparently impassable barrier of the great ocean and had, so to speak, piled high against the barrier.

All the forces of this civilization found their highest expression in the little group of islands lying on the edge of the great sea. Just as Phœnicia, centuries before, was the agency through which the enlightenment of the East was carried into Europe, so England carried to the New World beyond the sea the spirit of freedom of man, of culture, and of charity.

PART TWO

GREAT INVENTIONS AND THEIR EFFECT ON CIVILIZATION

The centuries do not yield to man equal advancement. Some are very fertile; others are almost, if not quite, barren. The entire period of a thousand years stretching from the fall of Rome to the discovery of America which we have studied, gave little to the world in the way of inventions that can be said to have marked steps in the civilization of man. On the other hand, the nineteenth century was the greatest in point of human progress, especially in the field of inventions. It alone gave to man far more of civilization than the whole ten centuries before the discovery of America or indeed any other period of a thousand years. One hundred years ago there was not a mile of railroad, ocean cable, or telegraph wire in the world; not a telephone, automobile, electric light, or typewriter. The people were then deriding the new-born idea of the steamboat, and wireless telegraphy had not been dreamed of.

Even up to the beginning of the Revolutionary War, less than one hundred fifty years ago, no man in America had ever seen an envelope, a match, a stove, a piece of coal, a daily newspaper, a sewing machine, a reaper, a drill, a mowing machine, galvanized iron, India rubber, or steam-driven machinery. We who are alive to-day are fortunate more than any other generation thus far in the world's population.

The horse and the dog of to-day are not very different from the horses and the dogs of a thousand years ago. From the beginning they have done about all they can ever do. Not so with man. He is a progressive animal. He is always reaching outward and upward for broader and higher things.

The difference between the lives of the primitive cave-dweller and the modern American is unspeakably vast. But looking far down the vista of future ages, who shall say that the fortieth century may not as far surpass the twentieth as the twentieth does the sleepy dawn of man's existence on the earth? We are packing more of life into a day than our ancestors could put into a month; and the hours of the centuries to come will hold a fuller experience than our days.

In the following pages we shall read about the great milestones which mark man's progress toward civilization. We shall see how he attained his present comforts in the way of food and clothing, how the commerce and industry of to-day were made possible, and last of all, what progress man has made towards protecting his health.

XIII

FIRE AND LIGHT

The Importance of Fire. Nothing has played a more important part in the history of the human race than fire. It is one of man's absolute necessities. Without it civilization would have been impossible, and life itself could scarcely have continued. The story of man's power to produce and use fire is practically the story of civilization. Human progress and culture began with the use of it, and have increased in proportion as its uses have increased.

Before Man Made Fire. For centuries man did not know how to produce fire or how to turn it to his use. He was helpless before it. To him it was a terrible thing, for he saw it only in the flash of the lightning, the eruption of the volcano, the scorching heat of the sun, or the burning devastation of forest or prairie fires. So he wove tales about it and strange legends which have come down to us from ancient times. Because of its mysterious origin and its uncontrollable power for good or ill, fire was supposed from the earliest times to be divine, and some nations even worshipped it as a god. Some of these fire gods were supposed to be good and some evil.

Man's First Use of Fire. Because man knew no better about this marvel of nature, he became superstitious in regard to it, and endowed it with many qualities. Some peoples used it for purification from sin and the cure of disease. Fire was burned on the tombs of the dead to dispel evil spirits. Greek colonists, in setting out from their native country to found new homes, took fire from their native altar with which to kindle fires in the new home. Ambassadors from foreign countries were received in the temple of fire, where meals were prepared for them. No Greek or Roman army would cross a frontier without taking an altar whereon burned, night and day, fire brought from the temple at home.

The Anglo-Saxon used the ordeal by fire as a method of trying criminals. The accused was compelled to walk blindfolded over red-hot plowshares. If these burned him, he was adjudged guilty; if not, he was acquitted, for it was supposed that the purity of fire would not permit it to burn an innocent person. Among the Indians, affairs of importance were always discussed around the council fire.

Ways of Making Fire. It was not, however, until man began to learn the many uses of fire that it came to be a factor in progress and industry. At first the means of producing fire were difficult and primitive. Two sticks rubbed together made a flame. Fire was produced also by pushing the end of a sharp stick along a groove in another stick, or by twirling a stick rapidly in a hole made in another piece of wood. Thus fire was made by friction.

Another method of making fire was by focusing the rays of the sun powerfully in one spot by means of reflection. After the discovery of iron ore, iron was used to make fire. A piece of flint was struck with great force against an iron object; the friction produced a spark which fell into a box of charred cotton known as tinder. The tinder took fire, but did not burst into flame. The flame was made by touching the burning tinder with a piece of wood tipped with sulphur. This method of making fire was used until a little more than a hundred years ago.

The Invention of Matches. Finally, in the year 1805, an attempt was made to produce fire by chemical means. M. Chancel, a Paris professor, invented an apparatus consisting of a small bottle containing asbestos saturated with sulphuric acid. Wooden splints coated with sulphur, chlorate of potash, and sugar took fire when dipped into the bottle. This method was clumsy, and it was not until 1827 that the first really successful match was made by John Walker, an English druggist. His matches consisted of wooden splints coated with sulphur and tipped with antimony, chlorate of potash, and gum.

The Effect of Fire on Civilization. Now let us turn from the mechanical side of making fire, and see what the effects of the uses of fire have been on civilization. After man had learned how to produce a flame, his only way of keeping it was by igniting wood on the hearth or in some protected spot. This fire served him both for warmth and for light and was the only means he had of cooking his food.

As he could not take a fire with him to light his way in darkness, he was forced to invent a more practical method of lighting. The Eskimo made crude lamps of soapstone with wicks of moss resting in a mass of fat. Some peoples used the candlefish, which contains so much fat that it will burn with a wick of cedar drawn through it. From these first primitive means of lighting, men came gradually to use torches, then candles. After the discovery of oil came lamps; and finally the discovery of gas gave man a better and stronger light than before.

In every city now-a-days, enormous quantities of gas are made and circulated through pipes for the purpose of lighting streets and houses. The incandescent light which is used to light the streets in New York City is the burning of gas through a "mantle" which has been dipped in chemicals. Gas is used also in railway cars and on steamboats; the gas is stored in suitable places for the purpose, or is manufactured in a small apparatus which is transportable.

Electric Light. After the invention of gas, there came yet another discovery in the realm of light, that of electric lighting. The principal forms of electric light in common use are the ordinary electric bulb and the arc light, which is made by burning carbon sticks with electricity. We obtain not only the electric light of every-day use, but powerful beams, as seen in the electric searchlights. In Southern California, on the summit of Mt. Lowe in the Sierra Madre Mountains, is the largest search-light in the world. It is of 3,000,000 candle power, stands eleven feet high, and weighs 6,000 pounds. Its light may be seen for 150 miles out on the ocean.

The Value of Artificial Light. One of the greatest benefits that artificial light has conferred on mankind is in the safety it has brought on the sea. All great ocean liners are provided with powerful searchlights which aid them in detecting the approach of other vessels. In case of accident, these lights are indispensable in locating people thrown into the water. Lighthouses also are provided with strong searchlights whose beams, seen far out to sea, are a warning to approaching vessels.

The greatest advance and progress that light in its different forms has brought to man, is to be seen in the improved conditions of the every-day life of the people. Cities have been rescued from darkness and made safe, for in the olden times, when there was no artificial lighting, people scarcely dared to venture out after dark for fear of attacks from robbers or thieves. The present system of lighting has done much to change those conditions.

Facility in obtaining light has also been of great use in enabling people to read and work at night. It has thus lengthened the time of productive activities and has caused the work of the world to advance more rapidly.

XIV

The Plow

How our Ancestors Lived. It is almost impossible for us to imagine our ancestors of long ago living without fire; but it is hardly less difficult for us to realize that they did not know wheat and corn and other products of cultivated soil with which we are familiar. Before man knew how to cultivate the soil, he was dependent for food on whatever he could find, such as roots and berries, or on whatever wild animals he could catch and kill. When he had eaten all the roots and berries he could find in one place, he was forced to wander on until he found a new spot abounding with food. He could not settle permanently in one place, for the fear of starvation kept him wandering.

When, however, he learned that tilling and tending the ground made it rich and caused it to bear crops, then he became interested in owning his land, and could settle down in a permanent community and raise his crops each year with no fear of starvation. The implement that gave him this mastery was the plow.

The First Plow. The first plow was roughly made from a forked tree. One branch served as the beam, while the other branch was cut off and pointed, and the tail was trimmed to form a handle. This was done without tools, as hard metals were unknown.

The pictures of plows on Egyptian monuments show that they were very crude. After bronze tools came into use, it was possible to make more finished and better plows of wood. As the wood became dull from constant use in the ground, people gradually came to tip the point of the plow with iron, which did not require sharpening so frequently.

The Modern Plow. It was not, however, until the entire blade of the plow was made of iron that the best results were obtained. Even then the wear and tear on the plow from use in heavy soil dulled the point quickly. Finally in 1855 James Oliver of South Bend, Indiana, invented a method of making "chilled plows."

In order to make a plow of iron, the metal has to be heated red-hot and then poured into moulds of the proper shape. The metal is left in the mould until it becomes cool and hard. Then the mould is broken away from the metal and the plow comes out whole. James Oliver devised the scheme of pouring the red-hot iron into a mould which rested in a metal vessel filled with water. The sudden cooling of the molten iron as it came in contact with the chill, as the outer vessel is called, gave it a surface as hard as the hardest steel. This method, with one or two later improvements, resulted in complete success, and gave us the strong, durable implement that we use to-day.

The Value of the Plow to the United States. Our great agricultural products would have been impossible but for the invention of the modern plow. The ancient plow merely stirred the soil or loosened it. Modern plows cut a furrow and turn it over, covering the sod and weeds and exposing the fresh ground to the healthy ventilation of air, rain, and frost. By this method the soil is stimulated, and good crops result.

We owe the vast crops of the West, and the wealth they bring, to the use of the plow in the agricultural lands. To-day in the West the farmers use a series of plows attached together and drawn by a great many mules. There are also steam traction engines which draw an even greater number of plows.

As a result of the invention of the modern plow and its most recent improvements, one million American farmers can cultivate as much land as ten million farmers in Asia, where the wood plow is still in use. Without it we could never raise the great crops of wheat and corn which the West now produces.

XV

The Compass

Sailing Long Ago. The man who sailed the seas long ago seems to us to have been a very helpless creature. With only crude maps or charts to aid him, he was dependent on the sun and stars for guidance. A vessel might be borne along by a heavy wind, and in dark and cloudy weather the mariners would be unable to distinguish the east from the west and the north from the south. They might be compelled to sail for days ignorant of the latitude they were in, until they at last reached land; nor would they then be able to tell in what quarter lay the country they had left behind.

The Magnet. It is curious that the discovery of the properties of a certain mineral substance proved a safeguard to the mariner in his ocean peril, and enabled him to steer his course accurately. This mineral is known as the magnet, or loadstone. It is a dark iron-gray in color. It is found in great abundance in the iron mines of Sweden, in some parts of the East, and in America, and sometimes, though rarely, among the iron ores of England. It possesses the remarkable property of attracting iron, which it draws into contact with itself, and holds firmly by its own power of attraction.

Tradition tells us that the discovery of the magnet was accidental. According to the Greek story, a shepherd, leading his flocks to Mt. Ida, lay down for a rest and left his crook leaning against a large stone. The upper part of the crook was made of iron. When the shepherd awoke and rose to depart, he found, on attempting to take up his crook, that the iron clung to the stone.

The Compass. The magnet has another property known as "polarity," or a disposition to turn to the north and south poles of the earth. Where this property was first discovered is not known, but it is this singular power in the magnet that has made it of so much importance in the history of the world. Through this discovery, the compass was invented about the year 1200.

At a very early date it was found that if a piece of loadstone was drawn several times along a needle or small piece of iron, the needle or iron would be converted into an artificial magnet. This magnetized needle, when carefully balanced so as to move easily on its center, will voluntarily turn around until one of its ends points to the north. If removed from this northerly direction, it will, when at liberty, invariably return to the same point.

The Effect of the Discovery of the Compass. One can easily understand the significance of this discovery and how invaluable it has been to mariners. With the two points of north and south plainly before him on the compass, he is enabled to guide his vessel with certainty over the trackless deep.

The invention of the compass, with the sense of security that it brought to travelers on the sea, led men to go on voyages of discovery and exploration, and so new lands were found. By the aid of the compass, Columbus was able to sail on his voyage of discovery to America, and to return to Spain with the news of his explorations. Other men, too, were made bold, until now there is scarcely a country or an island on the face of the earth that is not known to the entire world.

Through the compass, the use of vessels was vastly extended. From sailing vessels, such as were used in the time of Columbus, the development of ships was steadily advanced, until now we have the great ocean liners which so proudly sail over the whole world, each one guided by a magnetized needle.

XVI

GUNPOWDER

The Invention of Gunpowder. The invention of gunpowder was one of the most far-reaching events of all history. This terrific substance has not only revolutionized warfare, but has changed the current of human history itself. It is not known who invented gunpowder, or when it was first used. It is a compound of saltpetre, charcoal, and sulphur; the proportions in which these three ingredients are mixed vary in different countries and in different kinds of powders. It seems likely that powder was invented in the Far East, perhaps in China. Saltpetre comes, for the most part, from China and India, on whose vast plains it is found mixed with the soil. An ordinary wood fire kindled on ground containing saltpetre would bring the saltpetre into contact with charcoal, and thereby practically produce powder. It is probable that the discovery of the explosive occurred in this accidental way.

Fireworks were used in China from a very early date, but it is doubtful if the Chinese, or any other nation of Asia, used gunpowder as a propelling force. It was left for the Western nations to develop and give practical value to the discovery of the Chinese.

Early Use of Gunpowder. Our first knowledge of powder as an agency of war dates from about the year 700 A. D., when it was used by the Byzantine emperors in defending Constantinople against the Saracens. It was employed there, however, not as a propelling force, but in the form of rockets or a fiery liquid called Greek fire. Its first real use in Europe as a power for propulsion was in Spain, where the Moors and the Christians both used some kind of artillery as early as the twelfth century after Christ. Gunpowder was first introduced into England by Roger Bacon, a British scientist, who was born early in the thirteenth century. He probably did not discover its properties independently, but by reading ancient manuscripts.

Owing to the crude and uncertain methods of making gunpowder, it did not attain much value until Berthold Schwarz, a German monk, at about 1320 A. D. introduced an improved method of manufacture. The improved powder thus made was first used in England by King Edward III in his war against the Scotch in 1327. It was perhaps used on the continent of Europe earlier than this, but the occasions are uncertain. The tubes from which the missiles were propelled were called "carkeys of war."

Spenser called cannon "those devilish iron engines." They were probably used for the first time in field warfare by the English in the battle at Crécy, a small town in France, where on August 26, 1346, the English defeated the French. The artillery seemed to have been used in this battle merely to frighten the horses of the enemy, and the cannon were laughed at as ingenious toys.

MUSKETEER AND PIKEMAN OF THE EARLY SEVENTEENTH CENTURY

From the Battle of Crécy onward, the use of gunpowder spread rapidly throughout Europe, the Russians being the last to adopt it. Saltpetre, at first used in its natural state, began to be produced artificially, and then the manufacture of powder extended among the nations. During the French Revolution, the revolutionists were driven to such extremities for want of powder that they scraped old cellars seeking material for its manufacture.

Many recent improvements have been made in the production of gunpowder, the most important resulting in the smokeless powder.

Ancient Weapons. Before the introduction of cannon using gunpowder as a propelling force, various machines were used in warfare for hurling missiles. Large stones and heavy darts or arrows were thrown by means of tightly twisted ropes, like the action of a bow, or through the aid of a lever and sling. Various names were applied to these weapons, the chief of which were the ballista and the catapult. The ballista hurled stones by means of a twisted cord or a lever; the catapult by darts or arrows could throw a projectile half a mile. Both machines were used by the Romans with great effect, in both defensive and offensive warfare.

In destroying the wall of a beseiged town, the Romans used a battering-ram. It consisted of a beam of wood with a mass of bronze or iron on the end resembling a ram's head. In its earliest form, the battering-ram was beaten against the wall by the soldiers; later it was suspended in a frame and made to swing with ropes. Another kind moved on rollers, the swinging movement being given to it also by means of ropes.

The beam of the battering-ram was from sixty to one hundred and twenty feet long, the head sometimes weighed more than a ton, and as many as a hundred men were necessary to swing it. For the protection of the soldiers using it, a wooden roof covered it, and the whole was mounted on wheels. Scarcely any wall could resist the continued blows of the battering-ram. The Romans were the most effective in the use of this engine, though they borrowed it from the Greeks.

The first cannon were clumsy and comparatively inefficient. They were made of wooden bars held together with iron hoops, and they shot balls of stone. Cannon of bronze were next made, and in the latter part of the fifteenth century iron cannon came into use. The next improvement was the production of cannon of steel, and for some years past the best artillery has been made of this material. After stone balls ceased to be used, round balls of iron were utilized. These in time gave way to cylindrical projectiles of steel. Originally cannon were loaded at the muzzle, but in recent years breech-loading devices have been developed, so that now all of the best modern guns are loaded from the rear.

The Effect of Gunpowder on Warfare. The use of gunpowder in battle led to the development of modern fortifications and steel warships. In the Middle Ages gunpowder did much to put an end to marauding and insurrection, because the great expense of equipping a force with cannon and similar weapons made such equipment out of the question except for the government. In later years, because of the great cost of modern warfare and the terrible havoc which is created by modern weapons, the great nations have rarely gone to war.

Gunpowder, a Weapon of Peace. In the industrial world, gunpowder has been of the greatest value to mankind. In ancient times mining was done by pick and shovel. To-day, by the use of gunpowder and its modern product, dynamite, we are able to open up the earth to great depths, laying bare the vast deposits of coal, iron, and other minerals. In quarrying stone also, instead of the ancient laborious method of hand-labor, we are able to secure pieces of granite or marble of immense size, by drilling a hole and filling it with dynamite.

In building railroads, tunnels, and great water systems such as the Catskill Aqueduct, we should be almost helpless without some form of gunpowder. In building the Panama Canal, vast quantities were used in the Culebra Cut to tear down a large mountain. It is not difficult to see that the benefits of gunpowder to mankind fully equal its terrors.

XVII

PRINTING

The Value of Books. "Except a living man," says Charles Kingsley, "there is nothing more wonderful than a book—a message to us from the dead—from human souls whom we never saw, who lived perhaps thousands of miles away; and yet these, on those little sheets of paper, speak to us, amuse us, vivify us, teach us, comfort us, open their hearts to us as brothers. We ought to reverence books, to look at them as useful and mighty things." Milton calls a good book "the precious life blood of a master spirit, embalmed and treasured up on purpose to a life beyond life."

Cicero likens a room without books to a body without a soul. Ruskin says, "Bread of flour is good; but there is bread, sweet as honey, if we would eat it, in a good book." And Thomas Carlyle exclaims:

"Wondrous, indeed, is the virtue of a true book! O thou who art able to write a book, which once in two centuries or oftener there is a man gifted to do, envy not him whom they name city-builder, and inexpressibly pity him whom they name conqueror or city-burner!"

Is it not wonderful that a record of all the world has thought and said and felt and done can be deposited in a corner of my room, and that there I may sit and commune with the master spirits of all the centuries? Socrates, Plato, Homer, Cicero, Virgil, Horace, Paul, David, Moses, Buddha, Confucius, Goethe, Dante, Shakespeare, Hugo, Wordsworth, Tennyson, Carlyle, and Emerson, all in one room at the same time!

The Beginnings of Language. Great as books are, however, the world has not long had them. For many generations after man's advent, he had no language. He communicated with his fellows by means of gestures or gave vent to his feelings in rude grunts or cries, much as the lower animals do now. But God gave to man something He did not bestow upon the other animals—the power of articulate speech. Certain sounds came to represent certain ideas and a kind of oral language grew up. This became more and more highly developed as time went by. For centuries the traditions, stories, and songs of men were handed down orally from father to son and were preserved only in the memory. The poems of Homer, the great Greek bard, were recited by readers to large audiences, some of them numbering probably twenty thousand.

Early Systems of Writing. By and by men felt the need of preserving their thoughts in some more permanent way than by memory, and there grew up a rude system of writing. At first pictures or rude imitations of objects were used; a circle or a disc might represent the sun, and a crescent the moon. The idea of a tree was denoted by the picture of a tree. The early Indians of North America were among the peoples who used a system of picture writing. In process of time, as men grew in knowledge and culture, certain fixed signs began to denote certain sounds, and a phonetic system of writing was developed.

For the first phonetic alphabet it is generally supposed that we are indebted to the Phœnicians. This active, commercial people, who lived along the eastern shore of the Mediterranean Sea, scattered their alphabet wherever they sailed. Thus, in the course of time, some kind of phonetic alphabet finally came into use throughout the civilized world.

The First Books. Books among the ancients were very different from the books of the present. Paper has not been known long, nor, indeed, has the art of printing. When man began to preserve his thoughts and deeds in more permanent form than in the memory, various substances were used to write upon. Josephus, an historian of the Jews, mentions two columns, one of stone and the other of brick, upon which the children of Seth wrote accounts of their inventions and astronomical discoveries. Tablets of lead containing the works of Hesiod, a Greek writer, were deposited in the temple of the Muses in Bœotia. According to the Bible, the ten commandments which the Lord gave to Moses on Mount Sinai for the children of Israel were engraved on two tablets of stone; and the laws of Solon, the great Grecian lawgiver, were carved on planks of wood.

Egyptian Books. Sixty centuries ago on the banks of the Nile in northern Africa flourished the civilization of the Egyptians. There grew abundantly in Egypt a marsh reed called the papyrus. From the name of this plant is derived our word *paper*. The Egyptians made their books from the papyrus plant. With a sharp instrument they cut lengthwise strips through the stalk, put these strips together edge to edge, and on them at right angles, placed another layer of shorter strips. The two layers were then moistened with Nile water, pressed together, and left to dry. A leaf of writing material was thus produced. Any roughness on the surface of the sheet was polished away with some smooth instrument. A number of leaves were then glued together so as to form a long piece of the material.

The Egyptians took reeds, dipped them in gum water colored with charcoal or with a kind of resinous soot, and wrote on the long papyrus strip. Sometimes ink was made of the cuttle fish or from lees of wine. After the papyrus had been written upon, it was rolled up and became an Egyptian book.

Papyrus was used for writing material not only by the Egyptians but by the Greeks and the Romans also, and for a long time it was the chief substance used for writing throughout the civilized world. It continued in use to a greater or less extent till about the seventh century after Christ.

Chaldean Books. On the plains of Asia lived the Chaldeans, whose civilization was about as old as that of the Egyptians. But their books were very different. Men use for their purposes the things that are close at hand. In Egypt the papyrus plant was utilized for making books. In Chaldea, instead of this marsh reed, there were great stores of clay and of this material the ancient Chaldeans, and the Babylonians and the Assyrians who followed them, made their books. The Chaldeans took bricks or masses of smooth clay and, while they were yet soft, made impressions on them with a metal stiletto shaped at the end like the side of a wedge. In Latin the word for *wedge* is *cuneus*. Hence this old writing of the Chaldeans is called cuneiform or wedge-shaped. Some of these wedge-shaped impressions stood for whole words, others for syllables.

After the clay tablets had been written upon, they were burned or dried hard in the sun. A Chaldean book was thus made very durable and lasted for ages. During recent years many of these ancient tablets have been dug up and deciphered. They consist of grammars, dictionaries, religious books and hymns, laws, public documents, and records of private business transactions.

Early Books in Greece and Rome. The early Greeks and Romans used for their books tablets of ivory or metal, or, more commonly, tablets of wood taken from the beech or fir tree. The inner sides of these tablets were coated with wax. On this wax coating the letters were traced with a pointed metallic pen or stiletto called the stylus. Our English word *style*, as used in rhetoric, comes from the name of this instrument. The other end of the stylus was used for erasing. Two of these waxed tablets, joined at the edges by wire hinges, were the earliest specimens of bookbinding. Wax tablets of this kind continued in partial use in Europe through the Middle Ages. Later the leaves of the palm tree were used; then the inner bark of the lime, ash, maple, or elm.

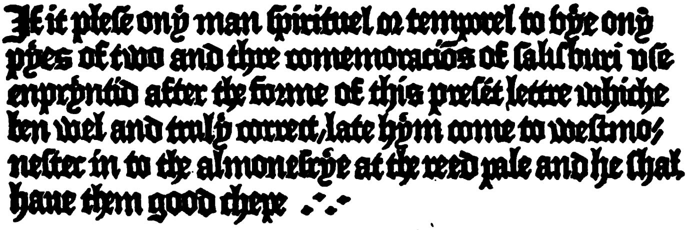
The next material that came into general use for writing purposes was parchment. This was made from the skins of animals, particularly sheep or lambs. Next came vellum, the prepared skin of the calf. Parchment and vellum were written upon with a metallic pen. As these substances were very costly, sometimes one book was written over another on the same piece of parchment or vellum. Of course this made the reading of the manuscript very difficult.

About the end of the ninth century or the beginning of the tenth, after Christ, parchment and vellum as material for books gave way to paper. At first paper was made of cotton, but during the twelfth century it was produced from linen. It is not known who invented linen paper, but its introduction gave the first great impulse to book-making.

In the early Greek books the lines ran in opposite directions alternately. That is, there would be a line from left to right across the page, and then the next lower line would begin at the right and run towards the left. Among some of the Orientals the lines ran from right to left. In the old Chinese books the lines were vertical down the page, as they are still. Among Western and Northern peoples the lines ran from left to right as in our modern books.

The old civilizations of Egypt and Babylonia, in which the art of book-making originated, sprang up, flourished, and decayed, burying precious secrets in the arts and sciences. The beautiful flower of Greek culture bloomed and withered. Passing westward, civilization knocked at the door of Rome and awakened there such military and legal genius as the world had not yet seen. Then the wild barbarians poured into Italy and overthrew Rome. The sun of civilization set for a time, and the period known as the Middle Ages began. However, potent forces gradually brought order out of chaos—forces that showed themselves in the Magna Charta, in the development of free towns, and in the growth of learning in monasteries and universities.

The Invention of Printing, 1440. About the beginning of the fifteenth century there came over the world a great intellectual awakening. The human intellect began to awake, to stretch itself, to go forth and conquer. One of the first signs and causes of this intellectual awakening was an event that happened at Mainz in Germany or at Haarlem in Holland, or possibly in both places at the same time. Of all the events that have influenced the progress of the human race, this is the most important. It is the invention of printing with movable type which occurred about the year 1440.



If it pleſe ony man ſpirituel or temporel to bye ony pyes of two and thre comemoraciōs of ſaliſburi uſe enpryntid after the forme of this preſēt lettre whiche ben wel and truly correct, late hym come to weſtmoneſter in to the almoneſrye at the reed pale and he ſhal have them good chepe

AN ADVERTISEMENT OF CAXTON, THE FIRST PRINTER IN ENGLAND

Before this time, ever since man began to record his thoughts, whether on plank, stone, or papyrus, on bark of tree, skin of animal, or tablet of wax or paper, every letter was made by hand. The process was necessarily slow, books were rare and costly, and only the few could have them. But with the advent of a process that would multiply books and make them cheap, learning was made accessible to the multitude. The clang of the first printing press was the death knell of ignorance and tyranny.

Before the invention of printing with movable, metal types, a kind of block printing was used. The words or letters were carved on a block of wood; the block was applied to paper, silk, cloth, or vellum, and thus impressions were made.

It has always been a matter of dispute as to who invented printing. It is fairly clear that printing, both with blocks and with movable types, was practised in China and Japan long before it was in Europe. There is a tradition that as far back as 175 A. D. Chinese classics were cut upon tablets of stone, that these tablets were placed outside the university, and that impressions were made from them. However, we are not indebted to China or Japan for the art of printing. The real invention of printing, so far as the civilized world is concerned, occurred in Europe in the latter part of the fifteenth century. The inventor is often said to be Johann Gutenberg, of Mainz, Germany. Another strong claimant for this honor is Lourens Janszoon Coster, who lived at Haarlem, in Holland.

Coster and Gutenberg. Concerning the lives of Coster and Gutenberg little is known. Coster was born at Haarlem, Holland, about 1370 A. D. He was a member of the Haarlem Council, assessor and treasurer. He probably perished in the plague that visited Haarlem in 1439–40. Gutenberg was born of noble parents at Mainz, Germany, in 1410. He had an active mind and gave attention to the manufacture of money, the polishing of stones, and the

THE FIRST SHEET FROM THE PRINTING PRESS

making of looking-glasses, besides his efforts in printing. He died in February, 1468, poor, childless, and almost friendless.

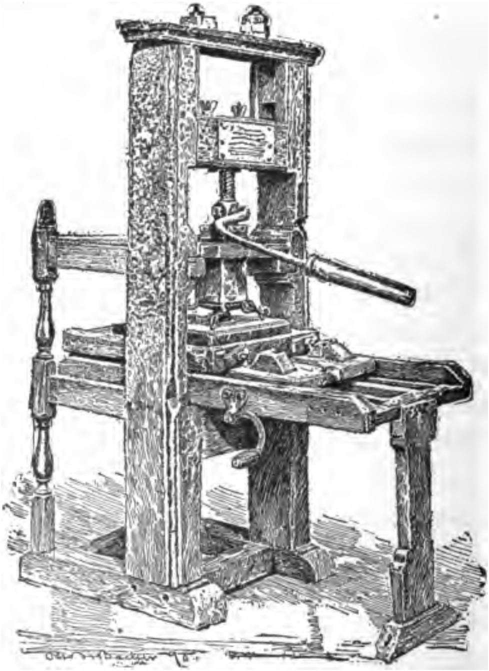
The first printed book, so far as can be determined, was made at Mainz, Germany, and bears the date of 1454 A. D. From certain legal records it is supposed that Gutenberg was the maker of this book and the inventor of printing. On the other hand, there is a story that Coster, while walking in the woods one autumn afternoon, chanced to make for his little grandchild some letters from the bark of a tree; that these letters suggested to him the idea of metallic types; and that he, and not Gutenberg, was the inventor of printing. As the story goes, a slave stole Coster's types and ran away with them from Haarlem to Mainz; and the books which, it is supposed, were made at the latter place came really from Coster's types, not Gutenberg's. The fact cannot be known. It has hopelessly gone with the years.

Progress in Printing. This first book, which was printed in two different editions, consisted of certain letters written by Pope Nicholas V in behalf of the kingdom of Cyprus. By about 1477 A. D. printing had extended from Mainz to all the chief towns of Germany, Italy, Switzerland, France, the Netherlands, Spain, and England. By the beginning of the sixteenth century it had spread to all the principal places of Europe.

In the type of the early books the various letter forms were not fixed as they are in modern books, but the type for each book was made as much as possible like the writing of the original manuscript. As printers moved from place to place introducing their art, it seems that no one carried away the types of his master but each made his own anew. Type was originally made and set up by hand, piece by piece, so that even the production of printed books was very slow. Various mechanical devices have been invented from time to time, quickening and cheapening the making of books and other printed matter, so that to-day printers turn out books and papers in large quantities in an amazingly short time.

Early Newspapers. The first newspaper in the world is believed to have been the *Frankfurter Journal*, published about 1615 A. D. at Frankfort-on-the-Main, in Germany. But of this there is no certainty. Newspapers, however, had their beginnings in Germany and Italy some time in the latter part of the sixteenth or the first part of the seventeenth century. It is believed that the *Weekly News*, started in London in 1622, was the first newspaper published in England.

In the United States there was a printing press attached to Harvard College, at Cambridge, Massachusetts, as early as 1638, two years after the college was founded, and only six years after the settlement of Boston. With this one exception, for a long time there were no printing presses in the colonies. A newspaper called *Publick Occurrences* was started in Boston in 1690, but it was soon afterward suppressed by the British government. The first permanent newspaper in America was the *Boston News Letter*, established at Boston in 1704.



THE PRINTING PRESS AT WHICH FRANKLIN WORKED IN BOSTON

To-day over twenty-one thousand newspapers and periodicals are printed in the United States alone.

Modern inventions have given us printing presses run by electricity and type-setting machines, and have lowered the cost of paper and binding; all this has helped to make books and newspapers very cheap. The one-cent newspaper is found all over the

United States. The schoolbooks which we have are a great advance on those in use fifty years ago, and they cost no more to the purchaser and some of them cost less. Reading of all kinds is within the reach of everybody. If we cannot afford to have books in our homes, the Public Libraries have great collections of books which are at our disposal.

Results of the Invention of the Printing Press. Before the invention of printing, generation after generation of mankind lived and died, and each knew little about its predecessor. Printing gave to the world the accumulated wisdom of the past and marked a great step forward in the growth of civilization. Books have made the knowledge of any one person accessible to all.

Before the art of printing was known, there were no means by which items of news and interest could be circulated. One half of the world knew nothing of what the other half was doing or thinking. Governments were made and unmade by force and superstition. Power was in the hands of a few men, who used it to satisfy their own pride or desire for wealth. No justice was possible, because there was no united action by the people, each of whom led his own life ignorant of the needs of others. But from the moment that the printing press opened the eyes of men to the thoughts, ideas, and needs of people of other parts, then began the rule of public opinion.

From the uniting of public opinion came representative government, a government of the people. This point above all others is important to us. If we are to take part in the government of our country, by casting votes and in other ways, we must be educated so that we may understand the needs of our city and our nation. Printing has done a great deal to make it possible for each of us to receive an education. We must take advantage of this opportunity and learn to serve our country in the best manner.

XVIII

THE COTTON GIN

The South after the Revolution. The close of the Revolutionary War found the Southern colonies in very poor condition. Their market for their largest product, tobacco, was limited, because trade with Europe was at a standstill. Even after the close of the war, such trade was very uncertain. The people were impoverished, and many of the plantations had been ruined by the war. It was impossible to purchase some of the necessaries of life in America, and they had to be imported from Europe. Many of the Southerners had little or no money, so they often mortgaged land to obtain the money to buy from abroad. If this had kept on, we can readily see that the Southern planter would have been a bankrupt.

The Beginning of Cotton Growing. Previous to the year 1780 the world's supply of cotton was produced in India and China. The great cost of transporting the raw cotton to Europe made the price of finished cotton cloth almost prohibitive to the average man. In fact, the manufacturing of cotton cloth was largely confined to India and China, the sources of the raw material.

At the close of the Revolutionary War, cotton raising was tried as an experiment in the Southern states. It was found that in Tennessee and all the country to the south it could be grown very readily. This was the beginning of one of the greatest crops which our country produces, a great source of wealth to our Southern states, and indirectly of immense importance to New England.

At first the cotton was shipped to England, where the invention of the steam engine had so reduced the cost of spinning that there was a large demand for the raw material. There were at this time few cotton mills in the United States, because under English rule the colonies had been forbidden to manufacture anything that could be made in England.

During the first ten years of cotton raising, great difficulty was found in preparing it for the English mills. Cotton is like a flower which has "gone to seed," and until the seeds are removed, it is of no value. During this period, the seeds were picked from the cotton by hand, which required an immense amount of time. Therefore the cost of production was very high, for a single laborer could clean only two or three pounds a day.

The Invention of the Cotton Gin. In 1793 Eli Whitney, a young graduate of Yale College and a native of Connecticut, who was living in the South, invented the famous cotton gin. By this machine, one man could separate in one day as much seed as a man working by hand could do all winter; that is, in one day a man could do the work of one hundred men under the old conditions. The priceless value of such a machine was so apparent that many men tried to copy it. From the day Whitney invented the

ELI WHITNEY

cotton gin until his death, even after he had patented it in 1794, he was compelled to fight to protect his rights in his invention.

Increase in Cotton Production. The cotton gin came almost immediately into general use. In ten years the amount of exported cotton grew from 190,000 pounds to 41,000,000 pounds. The South became a busy section of the country, wealth increased, debts were paid, and the road to bankruptcy was turned into the road to fortune.

NEGROES WORKING IN A COTTON FIELD

The Effect on Slavery. To plant, and pick, and gin all this new crop required more labor than the South contained. As the white man was unable to stand the heat of the Southern fields, there was a great demand for negro slaves, who were descended from heat-hardened natives of Africa. As an immediate result, negro slaves from all over the country were sold to the planters of the far South at prices far in excess of their previous value. The plans of some of the Southern states to free their slaves were at once abandoned. On the other hand, most of the slaves in the North were sold to the South, and the Northern states soon abolished slavery within their boundaries. Within twelve years after the invention of the cotton gin, slavery was forbidden in all states north of Maryland.

What was the Result? In the North, the feeling that slavery was wrong grew very rapidly, for the Northerners were not influenced, as were the Southerners, by the necessity for negro labor. In the South, this absolute need for the black man, and daily familiarity with the custom of slavery, made the Southerner feel that Providence had given him slavery as a means of overcoming the handicap of the climate. These opposing ideas were firmly fixed in the North and South, and from the invention of the cotton gin dates the real beginning of the quarrel which led to the Civil War.

The Effect on the North. Immediately after the Revolution, efforts were made by the governments of the various Northern states to induce the importation of English manufacturing machinery of all kinds. Through the bounties offered, a few men were induced to start mills for the spinning of cotton, but it was not until after the invention of the cotton gin that the mills were established in any great number. Finally they spread over all the Northern states, but chiefly over the New England states.

The Tariff. When the new government of the United States was established, it found itself handicapped by lack of money. One of the means of securing money was to tax manufactured articles imported from Europe. This tax was levied or not, according to the needs of the government. It was a *tariff for revenue.*

When the cotton mills began to spring up, the government was so anxious to insure their success, that a *protective tariff* was placed on manufactured articles brought into this country from Europe. Because of this tax, the price of the imported goods was increased, and this helped the sale of the products of the new mills. It made it possible for the American mills to compete with the cheap labor of the foreign factories, especially the English factories.

The Effect of the Tariff. In another way, also, the cotton gin vitally affected us. The Southerners did not wish a tariff, except for revenue, as it made them pay more for imported articles than would have been necessary without a tariff. It was of no direct benefit to them. The South, which was exporting cotton to England, bought more in return than the North, which at this time had very little foreign trade. In this way the breach between the North and the South was widened. Even to this day the question of the tariff is one on which people differ, the high-tariff partisans coming largely from the North and the low-tariff partisans from the South.

Thus this one invention completely revolutionized one of the greatest industries in the world. It turned the South into a wealthy section of our country, from which for a long time came the bulk of exports to foreign countries. It led to the establishment of cotton mills in the North, which in turn sent out exports of even greater value than the South. The cotton gin made the slavery question an issue of great importance, and indirectly it led to the establishment of the protective tariff. Both of these facts are of vital interest in the history of the United States, for they led to the great Civil War.

XIX.

The Steam Engine

What the Steam Engine Has Meant to Mankind. The most powerful and important mass of matter on the earth is the steam engine. It is the throbbing heart of civilization, even as the printing press is its brain. It would be difficult for man to compute his debt to steam. Upon it he relies for food, clothing, and shelter, the three necessities for which the race has always striven; and without it he could have scarcely any of life's comforts and luxuries.

Steam is the mistress of commerce, manufacturing, and mining, and the servant of agriculture. Steam gives employment to millions of men. It plants cities and towns in waste places. It enables man to leave the little valley or hillside where his fathers lived, and makes of him a citizen of the world. It lessens the power of time and space, and makes neighbors of ocean-divided continents.

It would not be easy for men living in the twentieth century to imagine a society uninfluenced by the use of steam; but nearly all of man's life on the earth has been passed without its help. Fire and water, the two productive factors of steam, have always existed; but it was not until a few score of years ago that man learned to put them together successfully, and to produce the greatest force known to civilization. In the few years since its discovery it has spread to every nook and corner of civilization.

Suppose you could ascend to some great height whence you could see working at one time all the steam-driven machinery in the world. What a sight it would be! What if the noise from all this machinery—the screech of the speeding locomotive, the hum and roar of factory and mill, the hoarse yell of ships, and the puffing of mine-engines—should reach your ear at once? What a sound it would be!

The Early Use of Steam. The idea of using steam for driving stationary machinery originated in the early centuries. This was the first use to which steam was put. For a long time no one seems to have thought of using it for transportation purposes. As far back as 130 B. C., we find mention of "heat engines," which employed steam as their motive power, and were used for organ blowing, the turning of spits, and like purposes. But from this early date till the seventeenth century practically no progress was made in the use of steam. Though men had experimented with steam up to this time with more or less success, the world is chiefly indebted for the developed type of the steam engine to James Watt and George Stephenson.

James Watt and the Stationary Engine. Watt was born in Greenock, Scotland, January 19, 1736. He was a poor boy and early in life he was thrown upon his own resources. During his youth he struggled against ill health; for days at a time he was prostrated with severe headaches. But he was bright, and determined, and had a genial disposition that made him many friends. When he was twenty-one years old, he secured a position as maker of scientific instruments for the university in Glasgow. He began discussing with some scientific friends at the university the possibility of improving the steam engine, which at that time was used only for pumping water, chiefly in the drainage of mines. He entered upon a scientific study of the properties of steam and tried to devise means for making the steam engine more useful. One Sunday afternoon early in 1765, while walking in Glasgow, the idea he had studied so long to evolve suddenly flashed into his mind. Without delay Watt put his plan to the test and found that it worked.

For a long time, owing to a lack of money, he had difficulty in establishing the merits of his improvements. Finally he formed a partnership with Matthew Boulton, a wealthy and energetic man who lived at Birmingham, England. They began the manufacture of steam engines at Birmingham, under the firm name of Boulton and Watt. This partnership was very successful. Watt supplied the inventions; Boulton furnished the money and attended to the business.

Improvements in the Steam Engine. Before the time of Watt, the steam engine was exclusively a steam pump—slow, cumbrous, wasteful of fuel, and very little used. Watt made it a quick, powerful, and efficient engine, requiring only a fourth as much fuel as before. Under his first patent the engine was still used only as a steam pump; but his later improvements adapted it for driving stationary machinery of all kinds and, save in a few respects, left it essentially what it is to-day.

Prior to Watt's inventions, the mines of Great Britain were far from thriving. Many were even on the point of being abandoned, through the difficulty of removing the large quantities of water that collected in them. His improvements made it possible to remove this water at a moderate cost, and this gave many of the mines a new lease on life. The commercial success of his engine was soon fully established.

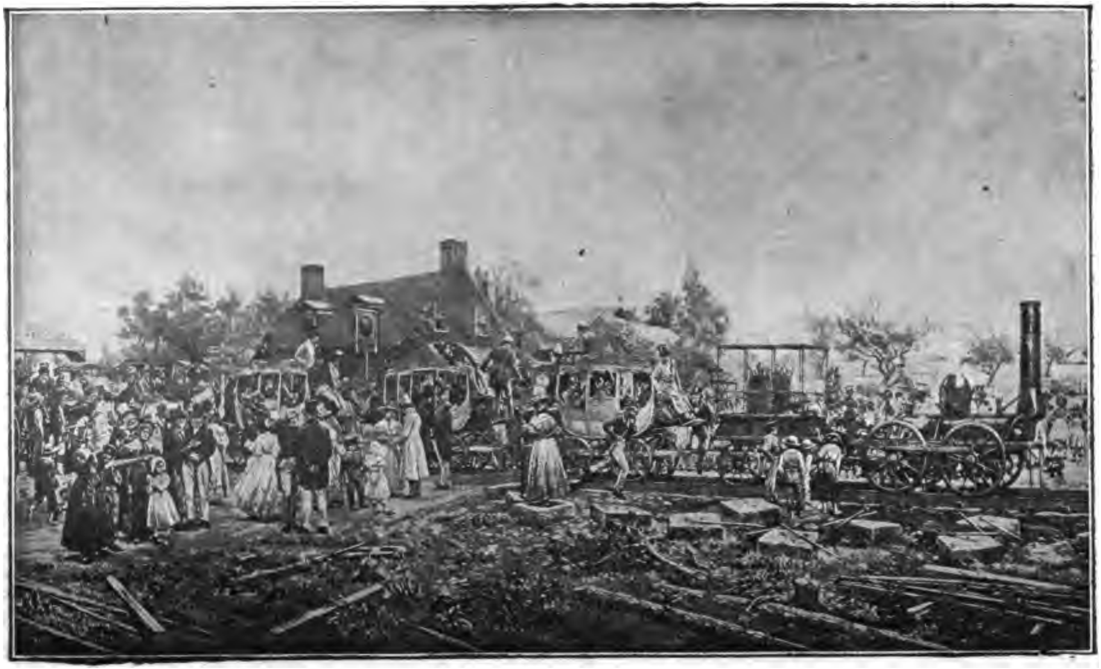
Watt paid practically no attention to the use of steam for purposes of transportation. In one of his patents he described a steam locomotive; but he offered little encouragement when his chief assistant, Murdoch, who was the inventor of gas lighting, made experiments with steam for locomotion. The notion then was to use a steam carriage on ordinary roads. Railroads had not been thought of. When the idea of using steam on railways began to take shape in the later days of Watt, he refused to encourage the plan. It is said that he even put a clause in a lease of his house, providing that no steam carriage should ever approach it under any pretext whatever. He died in 1819 without admitting that such an idea was feasible.

George Stephenson and the Locomotive. We owe to Watt a great deal, but to George Stephenson we owe a greater debt as the inventor of the steam locomotive. Stephenson was born at Wylam, near Newcastle, England, June 9, 1781. His father was a fireman of a coal-mine engine at that place. In boyhood George was a cowherd, but he spent his spare time making clay models of engines and other objects of a mechanical nature. When he was fourteen years old, he became assistant to his father in firing the engine at the colliery, and three years later he was advanced to engine driving. At this time he could not even read; but, stimulated by a strong desire to know more of the engines made by Boulton and Watt, he began in his eighteenth year to attend a night school. He learned rapidly. During most of this time he worked at various experiments with a view to making a successful steam locomotive.

Modern railways had their origin in roads called tramways, which were used for hauling coal from the mines of England to the sea. At first ordinary dirt roads were used for this purpose; but as the heavy traffic wore these roads away, it became the practice to place planks or timbers at the bottoms of the ruts. Afterwards wooden rails were laid straight and parallel on the level surface. The rails were oak scantlings held together with cross timbers of the same material, fastened by means of large oak pins. Later strips of iron were nailed on the tops of the wooden rails. Over these rails, bulky, four-wheeled carts loaded with coal were pulled by horses.

Stephenson made what he called a traveling engine for the tramways leading from the mines where he worked to the sea, nine miles distant. He named his engine "My Lord." On July 25, 1814, he made a successful trial trip with it.

The First Railroads. The successful use of steam in hauling coal from the mines led thoughtful persons to consider its use for carrying merchandise and passengers. At this time freight was transported inland by means of canals. This method was slow; thirty-six hours were required for traveling fifty miles. Passengers were conveyed by coaches drawn by horses. In 1821 a railroad for the transportation of merchandise and passengers was opened between Stockton and Darlington in England. The line, including three branches, was thirty-eight miles long. The plan was to use animal power on this



AN EARLY RAILROAD TRAIN IN ENGLAND

road, but George Stephenson secured permission to try on it his steam locomotive.

In September, 1825, the first train passed over the road. It consisted of thirty-four cars weighing, all told, ninety tons. The train was pulled by Stephenson's engine, operated by Stephenson himself, with a signalman riding on horseback in advance. The train moved off at the rate of ten or twelve miles an hour, and on certain parts of the road it reached a speed of fifteen miles per hour. The trial was a complete success.

The road had been built chiefly for the transportation of freight, but from the first, passengers insisted on being carried, and in October, 1825, the Company began to run a daily passenger coach called the "Experiment." This coach carried six persons inside and from fifteen to twenty outside. The round trip between Stockton and Darlington was made in two hours. A fare of one shilling was charged, and each passenger was allowed fourteen pounds of baggage free. The Stockton and Darlington was the first railway in the world over which passengers and freight were hauled by steam.

Stephenson was next employed to help construct a railway between Liverpool and Manchester. The most eminent engineers of the day predicted that the road could not be built. But it was built. On the fifteenth of September, 1830, Stephenson made a trial trip over the road with an improved locomotive named the "Rocket." On the trial trip the "Rocket" made twenty-nine miles an hour. This trip firmly proved the possibilities of steam as motive power on railways and started the modern era of railroad building. Other railways were quickly built and soon they radiated from London to nearly every English seaport.

Travel in America Before the Railroad. Before the days of railroads in America, freight was hauled on canals and passengers rode in stagecoaches or on horseback. A coach made the trip from Boston to New York twice a week and the journey required six days. A trip from New York to Philadelphia took two days. From Philadelphia to Baltimore the roads were good, but south of Baltimore they were bad and even dangerous. South of the James River the traveler was compelled to make his journey on horseback. A coach from Charleston to Savannah was the only public conveyance south of the Potomac River.

In the days of the old colonial stagecoach, if a traveler wished to go from Boston to New York, he would have to be ready to begin the journey at three o'clock in the morning. The stage had no glass windows, no door or step, and passengers were obliged to climb in at the front. One pair of horses pulled the stage eighteen miles, and then they were relieved by another pair. At about ten o'clock in the evening, after a day's journey of forty miles, the stage drew up at an inn for the night. At three o'clock the next morning, after dressing by the light of a horn lantern, the traveler must resume his journey. If the roads were bad, he might have to alight from the stage and help the driver pull the wheels out of the mud. Rivers were crossed on clumsy flatboats. When the streams were swollen with rains or filled with floating ice, the passage across was often dangerous.

The trip from Boston to Philadelphia, which took eight days in Washington's time, can easily be made now by train in as many hours. In these days of the modern railroad, San Francisco is nearer in time to New York than Washington was scarcely a hundred years ago.

The First Railroad in America. The first railway in America was built in 1826. It connected a granite quarry at Quincy, Massachusetts, with the town of Milton in the same state. It was only two or three miles long, and was operated with horses. In May, 1829, three English locomotives—the first ever seen in America—were unloaded at New York City. On August 9 of the same year, one of these engines was tried at Honesdale, Pennsylvania. This was the first time that a locomotive ever turned a wheel on a railway in America.

A canal which the business men of Philadelphia proposed to construct from their city to Pittsburg, in order to give them access to the trade centers of the West, threatened the commercial prosperity of Baltimore. To offset the advantages which the canal would give Philadelphia, at a great public meeting in Baltimore it was decided to build a railway from Baltimore to some point on the Ohio River. The road was named the Baltimore and Ohio. In 1830 it was finished from Baltimore as far as Ellicott's Mills, a distance of fifteen miles.

The Baltimore and Ohio was the first railroad in the United States built for the express purpose of carrying passengers and freight. The original intention was to pull cars over this road with horses, but Peter Cooper persuaded the railroad officials to try his engine "Tom Thumb," which he had built in 1829. The trial was successful, for "Tom Thumb" drew a carload of passengers at the rate of fifteen to eighteen miles per hour. This engine was the first locomotive built in America, and its trial was the first trip ever made by an American locomotive.

The first railroad in the United States constructed with the original purpose of using steam as motive power was the South Carolina railroad, a line one hundred thirty-six miles long between Charleston and Hamburg. A locomotive built in New York City, called the "Best Friend," made its first trip over this road in November, 1830. It was the first locomotive to run regularly on a railroad in the United States.

The Development of Railroads in America. Railroad building spread rapidly in America, as it had in England. By 1835 there were twenty-two railroads in the United States, two of them being west of the Alleghenies, though no road was more than one hundred forty miles in length. There was no railroad west of the Mississippi River prior to 1853, and in that year a line only thirty-eight miles long was built. During 1912 alone, 3886 miles of railroad were constructed in the United States. At the end of that year, there was a total in the United States of 241,200 miles, or enough to reach more than nine times around the entire globe.

The United States now has thirty per cent more miles of railway main track than all of Europe, and contains two fifths of the railroad mileage of the world. The railroads of the United States represent a value of about fifteen billion dollars, and give employment to a million and a half persons.

The Pennsylvania Railroad was originally owned by the state. Any one could use it by paying certain charges, and each person operating the road furnished his own cars, horses, and drivers. There were frequent blockades; when two cars going in opposite directions met, one had to turn back. If rival shippers came together and neither was willing to yield to the other, a fight probably settled the rights of precedence. After a time steam became the sole motive power, and the locomotives were owned by the state.

The railroad journeys of our grandfathers were very different from our own. In their day the rails were wooden beams or stringers laid on horizontal blocks of stone. Strips of iron were fastened with spikes to the tops of the wooden rails. The cars were small, each seating only a few passengers. The locomotive was crude. Its greatest speed was about fifteen miles an hour. It could not climb a hill, and when a grade was reached, the cars had to be pulled up or let down with ropes managed by a stationary engine. No cab sheltered the engineer; no brake checked the speed. Sometimes the spikes fastening the iron strips to the tops of the wooden rails worked loose, and these strips curled up and penetrated the bottoms of the cars, greatly to the annoyance and fright of the traveler.

The bridges in those days were roofed. The smokestack of the locomotive, being too tall to pass under the roof, was made in two joints or sections fastened together with hinges. When the train approached a bridge, the top section of the stack was lowered. As wood only was used for fuel, the stack emitted a shower of sparks, smoke, and hot cinders. The passengers coughed and sputtered, and covered their eyes, mouth, and noses with handkerchiefs.

The Modern Railroad. The trip from Chicago to New York is about a thousand miles, over prairie, river, and mountain. Should you make the journey between these cities to-day, there would be no danger of conflict because two rival trains might want the track at the same time. Nor would you have to wait while ropes pulled the train up a grade, for the locomotive can climb the hills. Instead of the old wooden rails with their strips of iron, there is a double track of solid steel rails all the way. The landscape would fly past you at the rate of a mile a minute, instead of fifteen miles an hour.

Let us suppose that you leave New York at 2.45 o'clock P. M., eastern time. Before the train starts you could telephone to a friend without leaving the car. You might sit down, in an elegant dining-car, to a dinner of all the delicacies the market could afford. You might occupy your own exclusive compartment in a luxuriously equipped Pullman car, lit by electric bulbs, or you could spend the evening reading the magazines, newspapers, and books provided in the train library. You might write at a comfortable desk with train stationery, or dictate letters and telegrams to the train stenographer. You are provided with hot and cold water, bathing facilities, and a barber shop. A maid could be summoned to the service of women and children; and a valet would be in attendance to sponge and press clothing over night. You would arrive in Chicago the next morning at 9.45 o'clock, central time, having traveled the thousand miles in twenty hours.

Beginnings of the Steamboat. The idea of the steamboat did not originate in the brain of Robert Fulton. It is claimed that, as early as 1543, Blasco de Garay propelled a boat by steam, and that in 1707, just a hundred years before the time of Fulton's *Clermont*, Papin ran a boat with steam on a river in Germany. In 1763 William Henry experimented with a steamboat on the Conistoga River in Pennsylvania.

James Rumsey, a Scotchman living in Maryland, is said to have been the first American to discover a method for running a vessel with steam against wind and tide. He conceived the idea in August, 1783. During 1785 he made his boat, and in 1786 he navigated it on the Potomac River at Shepherdstown, Virginia, in the presence of hundreds of spectators. He wrote to General Washington of his invention, and Washington wrote concerning it to Governor Johnson of Maryland. In 1839 Congress voted a gold medal to James Rumsey, Jr., son and only surviving child of the inventor, in recognition of the elder Rumsey's achievement.

In 1787 John Fitch exhibited on the Delaware River a vessel to be propelled by steam, and in 1790, from June to September, he ran a steamboat on that river between Philadelphia and Trenton. But he could not induce the public to patronize his boat, and for lack of business it had to be withdrawn.

Some British authorities claim that the first practical steamboat in the world was the tug *Charlotte Dundas*, built by William Symmington, and tried in 1802 on the Clyde and Forth Canal in Scotland. The trial was successful, but steam towing was abandoned for fear of injuring the banks of the canal. Symmington had built a small steamboat that traveled five miles an hour in 1788.

Robert Fulton and The Clermont. To Robert Fulton, an American, belongs the credit for placing the steamboat on a successful commercial basis.

Fulton was born at Little Britain, Pennsylvania, in 1765. At the age of seventeen he adopted the profession of portrait and landscape painter. At twenty-two he went to England to study art. There he met James Watt, the inventor of the steam engine, and soon he began to give attention to mechanics. In 1793 he started to work on the idea of propelling boats by steam. He made an unsuccessful experi-

ROBERT FULTON

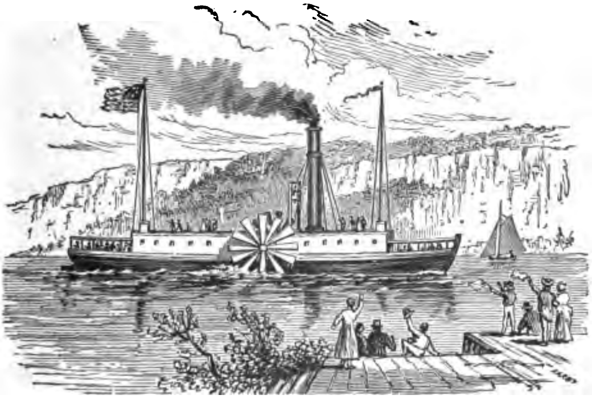
ment with a steamboat on the Seine River in France. The vessel sank because its construction was faulty.

Fulton returned to America and in New York harbor began to build another boat which he named the *Katherine of Clermont*, shortened to the *Clermont*. Her engine was procured from Boulton and Watt in England. The boat was one hundred feet long and twenty feet wide, weighed one hundred sixty tons, and was equipped with side paddle wheels and a sheet-iron boiler.

As the inventor worked patiently at his task, the newspapers gave him but little notice and the public ridiculed him. The New York legislature had passed a bill granting to Fulton and to Chancellor Livingston the exclusive right to navigate with steamboats the waters of New York State. This bill was a standing subject of ridicule among the legislators at Albany.

The First Trip of the Clermont. In August, 1807, the *Clermont* was ready for her trial trip. A large crowd of spectators lined the banks of the Hudson as the boat slowly steamed out into the river. The crowd jeered and hooted and shouted at the vessel their nick-name of "Fulton's Folly." As the *Clermont* moved up the river, making slow headway against the current, the crowd changed their jeers to expressions of wonder and finally to cheers. The dry pine wood used for fuel sent out a cloud of thick, black smoke, flames, and sparks, which spread terror among the watermen of the harbor. The *Clermont* made the voyage from New York up the Hudson to Chancellor Livingston's country estate near Albany, a distance of a hundred ten miles, in twenty-four hours. The trip was without mishap and it thoroughly established the practicability of steam for purposes of navigation.

Concerning this voyage Fulton wrote to a friend in Paris: "My steamboat voyage to Albany and back has turned out rather more favorably than I had calculated. The voyage was performed wholly by power of the steam engine. I overtook many sloops and schooners beating to windward, and parted with them as if they had been at anchor. The power of propelling boats by steam is now fully proved. The morning I left New York there were not thirty persons in the city who believed that the boat would ever move a mile an hour, or be of the least utility. While we were putting off from the wharf, I heard a number


THE CLERMONT ON THE HUDSON

of sarcastic remarks. This is the way in which ignorant men compliment what they call philosophers and projectors. I feel infinite pleasure in reflecting on the immense advantages my country will derive from the invention."

Opposition to the Steamboat. The *Clermont* was soon running as a regular packet between New York and Albany. The owners of sailing craft on the river hated her and tried to sink her. The New York legislature passed a bill declaring that any attempt to destroy or injure the *Clermont* should be a public offense punishable by fine and imprisonment. Then the enemies of the boat applied to the courts for an injunction restraining Fulton from navigating the Hudson with his steamboat. Daniel Webster appeared as Fulton's attorney. He won the case and secured for the *Clermont* the full rights of the river.

The first steamboat in the West was built at Pittsburg in 1811, and within a few years after the first trip of the *Clermont*, steamboats were being used on all the leading rivers of the country.

Fulton's Other Inventions. Fulton afterward built other steamboats, including a system of steam ferries for New York City. In 1814 he constructed the first United States war steamer. Before constructing the *Clermont*, Fulton was interested in canals and in the invention of machinery for spinning flax and twisting rope. He also made experiments with submarine explosives in England, France, and the United States;

but these were considered failures. He died February 24, 1815.

Ocean Steamers. From the earliest times men had sailed the seas, but their ships were small and slow and subject to wind, tide, and current. The success of the river steamboat led to the use of steam in ocean navigation. The first steamship to cross the Atlantic was the *Savannah*, in 1818. The vessel relied almost as much upon wind as upon steam for motive power, but during the voyage of twenty-five days steam was used on eighteen days.

The wood required for fuel left little room in the vessel for freight. With the advent of coal for fuel, and better machinery, steamships grew in importance, and in 1837 two ships, the *Sirius* and the *Great Western*, crossed the Atlantic from Liverpool to New York with the use of steam alone. By 1850 the average time for a trans-Atlantic voyage had been reduced to eleven or twelve days.

If the old *Savannah* could be placed beside the *Mauretania*, or any other of the modern giantesses among ocean steamships, a comparison would demonstrate the triumphs of the century in ocean navigation. If you were to cross the ocean on the *Mauretania*, you would enter a vast floating mansion nine hundred fifty feet long, one hundred feet wide, eighty-one feet high from keel to boat deck, and weighing thirty-two thousand five hundred tons. Her height to the mastheads is two hundred sixteen feet; each of her three anchors weighs ten tons;

and her funnels are so large that a trolley car could easily run through them. The *Mauretania* has accommodations for three thousand passengers, officers, and crew, and is driven by mighty turbine engines of sixty-eight thousand horse power. The steamer was built at a cost of $7,500,000. She has traveled the three thousand miles across the Atlantic in about four and a half days—the quickest trans-Atlantic voyage ever made. She moves through the great waves of the ocean with such steadiness that passengers can scarcely tell whether they are on water

A MODERN OCEAN LINER

or land. A telephone system connects all parts of the ship; there are electric elevators, a special nursery in which children may play; a gymnasium for exercise, shower baths, and an acre and a half of upper deck. There are five thousand electric lights, requiring two hundred miles of wire. Wireless telegraphy flashes messages to the moving ship from distant parts of the world, and bears back greetings from her passengers. A daily illustrated newspaper of thirty-two pages is published on board ship.

Other Uses of the Steam Engine. We have just read of the greatest uses of the steam engine, but we see about us on every side other uses of scarcely less importance. In the basement of almost every schoolhouse is a furnace making steam in cold weather to heat the building. The electricity which runs the cars on the street comes from dynamos which are run by steam. The pile drivers which we see used in the construction of tall buildings are run by a steam engine. The hoists and derricks which raise stone and steel to the highest stories are run by the steam engine.

In the West, great plows and harvesters are run by steam engines. In the rivers and harbors, the dredges which make the water deep enough for big vessels are run by steam. In factories of all kinds we find the steam engine used to run the machines.

The Results of the Invention of the Steam Engine. Think what the steam engine has meant to us!

In transportation, it has made it possible for the factories of the East to send their goods quickly and cheaply to all parts of the country. It has made it possible to bring quickly to the East the grain and meat of the West. Because of the railroad, we receive milk and country produce fresh each morning from places more than a hundred miles distant.

Before the steam engine was invented and perfected, everything was done by hand. Now shoes and clothing of all sorts are largely made by machinery. We manufacture so much that we export our manufactured products all over the world, and this brings us great wealth in return. Now that so much is done by machinery, people are free to do other things than provide the necessities of life; there is time to make progress in civilization along all lines.

Without the railroad, our great cities of the West could never have existed. They could not survive if they were cut off from connection with the East by railroads. With our enormous population, we in the East could not survive if we were not able to obtain quickly our food supplies from the West. In fact, we could not provide the necessities of life without the steam engine for railroads and factories. It is the basis of our ability to make use of the vast natural wealth which our country has. It has made possible the wealth and greatness of the United States to-day, as well as that of every civilized country in the world.

The Passing of Steam. Remarkable as has been the growth of steam and its services to the world, it is interesting to us to see with what rapidity steam is being displaced by electricity. Many railroads are using electricity in place of steam in the locomotives, especially in the suburban districts where a great many trains are run. On some roads the electricity is received through an overhead wire, and on others through a third rail. It has been found that it is less expensive to run a large number of trains by electricity than by steam. Another advantage is the freedom from the smoke, cinders, and dust that come from a steam engine.

In many factories electric motors are being used instead of the stationary steam engine. In smaller boats electric or gas engines have displaced the steam engine, and some larger vessels are run in the same way. It is probable that in the course of our lives we shall see even greater changes in this direction. The gradual elimination of steam is caused not only by the advantages we have mentioned, but also by the rapid decrease in the supply of coal, which is each year becoming a more expensive commodity.

XX

COAL AND IRON

Wood, the Fuel of the Ancients. We have read how man first made use of fire. To make fire, he used wood; and to keep fire, he burned wood. When iron first became known, the only method of separating the metal from the waste material with which it is always found, was the slow process of heating it over a wood fire. This made the use of iron an expensive luxury.

Early Uses of Iron. In the earliest times, nothing was known of iron. Weapons were made of stone, then of copper; but finally on the discovery of iron these materials were displaced. Finding that the use of an ordinary fire was very unsatisfactory in melting iron ore, men discovered that if they built a fire in a sheltered place where there was draft from above, the fire burned more fiercely and melted the ore more rapidly. But this method could be used only where the location was especially fitted, and it was really successful only when there was a wind. The next step was the invention of the bellows, which produced a forced draft that made the burning wood or charcoal yield greater heat.

The earliest iron obtained by these crude methods was very impure and hence of imperfect strength. With the introduction of the bellows, it was possible to obtain iron in a purer form.

All this was slow, and as wood was often scarce, iron products were very expensive. Iron was used almost entirely for weapons. The armor of the mediæval knights was largely made of iron; the cannon and cannon balls were made of the same metal. But commerce and the home made little use of iron, for the ordinary man could not afford it.

The Beginning of the Use of Iron in Commerce and Industry. In the middle of the eighteenth century, it was discovered that another mineral was hidden in the earth which would transform the making of iron, and through it would transform the whole world. Coal has been known for centuries, but its use as a means of melting iron was discovered less than two hundred years ago in England.

The change was almost immediate. The ease with which iron could be prepared from the ore for commercial purposes, immediately proved an incentive to man to invent means for using iron. Machines were built which made the spinning and weaving of cotton possible in other ways than by hand. But the machines were of value only where water power to turn them was available. James Watt with the steam engine changed this, and immediately there came an increased demand for iron for making engines. Coal was used in the engines, and hence there was an increased demand for coal also. Thus the whole character of life in England was changed.

The Effect in England. Heretofore England had been almost entirely an agricultural nation. It is true that there were some mills which wove cotton and wool, but the processes were slow. With the revival of iron and the use of coal, all was changed. The mills were no longer dependent on water power, and the people were no longer obliged to transport the products of their toil by wagon for hundreds of miles to a market. Iron had made the railroad possible. England became a manufacturing nation, the commercial center of the world. Factories sprang up, railroads were built, and the vast products of the mills were shipped throughout the world.

✓ Iron—**The Effect in America.** The young United States immediately took up these discoveries. Iron and coal in great quantities were found in Pennsylvania. Railroads were built, factories were started, and the great mining industry developed over almost the entire state of Pennsylvania. Great blast furnaces were built, and employment was given to thousands of men. It was not until the last half of the nineteenth century, however, that iron reached its greatest value. The metal, though stronger than any other substance previously known, was very heavy. Ships were built of iron, but they were cumbersome. Machinery was bulky, and there were certain limits beyond which man could not go because of the weight of iron. Furthermore, cast iron in its final form was absolutely inflexible and would break before it would bend.

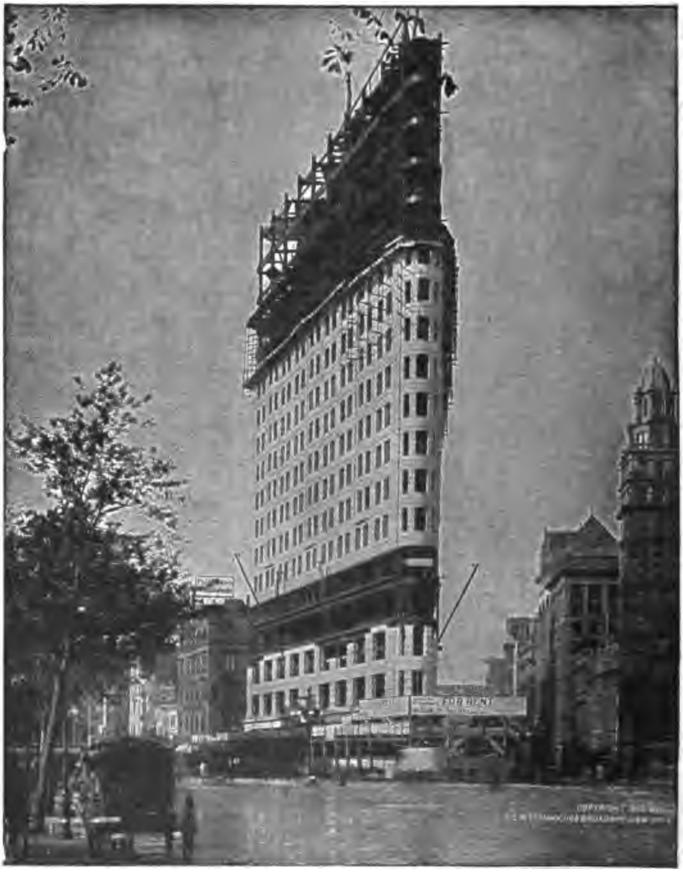
✓ **The History of Steel.** In 1856 Bessemer discovered that by remelting wrought iron under certain conditions, it was possible to make a product of iron which was flexible in a degree, and which weighed less, yet was stronger than iron. This was called steel.

Immediately the iron industry underwent another change. Great mills were established to make this new substance. Throughout western Pennsylvania and eastern Ohio, near the sources of fuel and ore, this new industry gave work to thousands and brought to Pittsburgh, especially, untold wealth. A few years ago many of these mills, finding competition ruinous, combined into the United States steel trust, under the lead of Andrew Carnegie. While there are still a few independent concerns, most of the steel in the United States is made by this organization.

The Uses of Steel. When we look around us and see on every side something in which steel is used, we can realize what Bessemer's invention meant. On the railroad the old iron rails have been displaced by steel rails which give, but rarely break. The locomotive is largely built of steel to withstand the shock of collision and to prevent fire in case of a wreck. Every big building is built on a steel framework. The big steamships are built of steel. All this followed from the discovery of the use of coal in smelting iron.

The Effect of Coal and Iron. Our country's wealth to-day would have been impossible without coal and iron. The vast products of all kinds of factories could not have been made. Transportation between distant points would have been impossible. No field would have been open for the labor of the millions who have come here from Europe.

Realizing the importance of protecting the great iron and steel industries, we have had in this country a high protective tariff. The cheap labor of Europe



STEEL FRAMEWORK OF THE FLATIRON BUILDING, NEW YORK CITY would have made it impossible for us to compete with foreign products. So, as in the case of cotton goods, a tariff or tax was placed on all iron and steel manufactures shipped to this country from abroad. This tariff represented the difference between the price for which the Europeans could sell the manufactured goods and the price for which our manufacturers could sell them. Until 1912 the tariff always made this difference in price large enough to give the American product some advantage. In 1912 the new tariff law reduced this tax, because it was believed that our industries were so firmly established that they no longer needed this protection.

XXI

THE REAPER, THE THRESHING MACHINE, AND THE HARVESTER

The Reaper. From the earliest times until nearly the middle of the last century, the cutting of grain was done by means of a hand sickle or curved reaping-hook. The sickles used by the ancient Hebrews, Egyptians, and Chinese differed very little from those of our own ancestors. This tool was only slightly improved as the centuries went by, and to this day the sickle may be seen in use. In many parts of the British Isles the reaping-hook gave place to the scythe in the early part of the nineteenth century. An attempt to trace the idea of a machine for reaping would carry us far back into the early stages of agriculture. Pliny, the Roman writer, born early in the first century of the Christian era, found a crude kind of reaper in the fields of Gaul.

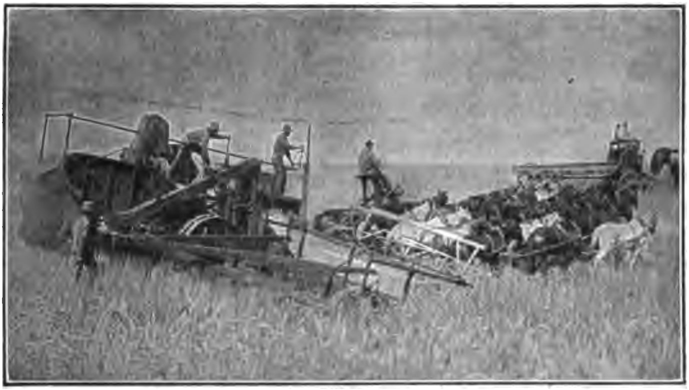
For the great modern invention of the reaping machine, civilization is indebted to Cyrus Hall McCormick, an American. Early in 1831 McCormick invented his first reaper. It was a failure. He tried again the same year and his second attempt was successful. He was slow to realize the importance of his invention and it was not until 1840 that he sold his reaper. This was the beginning. Two years later he sold twenty-eight reapers. Finally, in 1848, having established a factory in Chicago, he began to sell the machines in large numbers.

McCormick's original machine was improved upon, until one was invented which not only cut down the grain but bound the stalks up in bundles ready to be sent to the thresher.

The Thresher. The first threshing machine was invented by Andrew Meikle, a Scotchman, in 1787. This machine removes the grain from the stalk and prepares it for mills which grind it into flour or meal.

The Harvester. Finally a combination of the reaper and thresher was invented. Now we have one machine which cuts the grain, threshes it, and puts it into bags ready for the mills or the market. At first this machine was drawn by horses, but now a steam engine pulls it through the fields. Immense sections of grain are harvested in a day,—a task which, under the old methods, would have taken weeks.

The Meaning of the Harvester to the United States. Picture to yourself Central Park covered with tall grain and imagine trying to cut all this grain with a sharp tool. How long would it take to do it? A very long time. Then suppose you were to thresh the grain by grinding the stalk between two sticks. It would be a very long job, wouldn't it? But that is what our ancestors had to do.



A MODERN REAPER
This machine cuts, threshes, winnows, and sacks the wheat.]

Now this work is all done at once by the machinery which has made it possible to harvest the grain on a vast area. The western farms of thousands and thousands of acres would have been useless without the help of machinery. It would have been impossible to secure enough men to harvest the grain, and the harvesting would have cost so much that we could not all buy bread as we do now.

One hundred years ago the poor people of Europe could not buy white bread. It cost so much that only the rich could have it. Now that the harvester saves so much expense in collecting the grain, every one of us, rich or poor, can have the best bread that is made.

The development of the great farms of the West brought wealth to their owners. Great cities grew up near them, where the grain could be ground into flour and meal, and shipped to all parts of the world. Many of the cities of the West owe their existence to the wealth which has come from the soil through the reaper, the threshing machine, and the harvester.

XXII

THE TELEGRAPH AND THE TELEPHONE

Electricity. The great miracle of the twentieth century is electricity. If the printing press is the brain of civilization and the steam engine is its heart, electric wires are its nervous system. Steam is a giant; electricity is a witch. There is something uncanny about it.

Man writes volumes about electricity. He calls it positive and negative and measures it in ohms and volts; gives courses to explain it in his schools and universities; kills criminals, cures the sick, and scatters darkness with it. He makes it whirl him through space; compels it to bear his whisper through hundreds of miles, and can make it fly around the entire earth with his written word—and yet no man knows what electricity is. Electricity exists, and has always existed,—in the back of a cat and in the infinite arch of the sky.

A hundred years ago practically nothing was known of electricity. Persons now living were born into a world that had never seen an electric telegraph, a telephone, an electric car, or an electric light. We are living in the morning of electrical knowledge, and what the day may bring no one can imagine.

Americans have given the world many of the greatest inventions, and in the field of electricity they have given it nearly everything of value. It is to American ingenuity that civilization is indebted for the electric telegraph, the submarine cable, the telephone, the electric light, and the electric car. The names of Morse, Vail, Field, Bell, Brush, Gray, Edison, and Sprague—all American electrical inventors—will always be prominent in the list of the world's great benefactors.

Beginnings of Electricity. If you will rub a stick of sealing wax briskly with a woolen cloth, you will find that the stick of wax will attract to itself bits of bran, small shreds of paper, and the like. This is the simplest experiment in electricity. In the same way, by rubbing amber with silk, Thales, a Greek philosopher who lived in the sixth century before

Christ, is thought to have discovered electricity. The Greek word for *amber* is *elektron.* Because of the supposed discovery of electricity in amber by Thales, the English word *electricity* was "coined" and used for the first time by William Gilbert, a British physician and scientist, who lived during the reigns of Elizabeth and James.

For nearly twenty-five centuries, reaching from the time of Thales to the opening of the nineteenth century, the world learned practically nothing about electricity. The start in modern electrical knowledge was made by Galvani, an Italian scientist, born in 1737, who just before the last century dawned showed that electricity can be produced by the contact of metals with fluids. The term *galvanic,* used in connection with electricity, comes from the name of this investigator. Galvani's experiments suggested the electric battery to Volta, another Italian scientist who was born in 1745. The electrical word *voltaic* is in honor of Volta.

In 1752 Benjamin Franklin flew his kite into the thunderstorm and proved that lightning is electricity. A little later Hans Christian Oersted, a Danish investigator, pointed out the relation between electricity and magnetism. In the early part of the nineteenth century, Michael Faraday, an eminent English physicist, discovered the possibility of producing electric currents through the motion of a magnet. Faraday's discovery led to the electric dynamo machine, the source of modern power over electricity.

The First Telegraph. The oldest and greatest of electrical inventions is the telegraph. *Tele* is a Greek adverb meaning "afar." *Graph* comes from the Greek verb "to write." *Telegraph* therefore means "to write afar."

The idea of telegraphic communication is more than two and a half centuries old. In 1632 Galileo referred to a secret art of communicating at great distances by means of magnetic needles. In 1753 there appeared in the *Scots Magazine* an article signed "C. M." (since ascertained to have been Charles Morrison, of Greenock in Scotland) setting forth a fairly clear idea of the electric telegraph. Joseph Henry, of Washington, D. C., in 1831 signaled through an electrical circuit a mile in length. The first commercially successful telegraph was devised in 1837 by Samuel F. B. Morse, an American.

Morse and the Modern Telegraph. Samuel Finley Breese Morse was born in Charlestown, Massachusetts, April 27, 1791. He was educated in the common schools of his native town and in Yale University, where he was graduated in 1810. After graduation, like Fulton, the inventor of the steamboat, he went to Europe to study art, and became successful as an artist. On his return to America in 1832, one of his fellow passengers on the ship was Charles T. Jackson, who had been studying electricity in Paris. Jackson told Morse of some experiments in electricity which the French had been making, and remarked that it would be a good thing if news could be transmitted through long distances by electricity. Morse replied, "Why can't it be done?"

From that hour he gave his time and energy to the invention of the electric telegraph. During the remainder of the voyage he drew plans for apparatus and tried to devise an electric alphabet. In 1837 he put two instruments at the ends of a short line through which he sent and received messages. About this time he met a man who was destined to be of great service to him in promoting his invention, and

SAMUEL E. B. MORSE

one who deserves almost as much credit for it as Morse himself. This was Alfred Vail.

One day in September, 1837, after Morse had completed his apparatus, he was invited to exhibit it at the University of the City of New York. Alfred Vail was a student in the university at the time and was one of the spectators to whom the apparatus was exhibited. He was much impressed with it. Morse needed money, and Alfred Vail's father had it. Morse was invited to the home of the Vails in Speedwell, where the matter of the invention was talked over. The sum of two thousand dollars was necessary to get the invention started. Stephen Vail agreed to furnish the money. Alfred Vail was to construct apparatus and exhibit it to Congress. For this he was to have one fourth of the proceeds arising from the patent.

Early Experiments in Telegraphy. Alfred Vail set to work to construct the apparatus. A room in his father's factory was set apart for this purpose. William Baxter, a bright mechanic employed in the iron shops, was chosen to assist him. As secrecy was required for the work, the room was kept locked. For several months Vail and Baxter occupied together the locked room, sharing each other's confidence and each other's elation or disappointment as the work went well or ill. On January 6, 1838, Baxter, without hat or coat, rushed to the elder Vail's residence to announce that the apparatus was completed.

Mr. Vail had become discouraged. However, he went to see the trial of the apparatus. He found his son at one end of the three miles of wire that was stretched around the room, and Morse at the other. After a short explanation had been made to him, he wrote on a piece of paper, "A patient waiter is no loser." He then said to his son, "If you can send this, and Mr. Morse can read it at the other end, I shall be convinced." The message was sent and read at the other end of the wire. Soon afterward the apparatus was taken to Washington, where it created not only wonder but excitement.

In September, 1837, Morse filed an application for a patent on his invention. In December of the same year he failed in his effort to secure from Congress an appropriation for an experimental line which he proposed to build between Washington and Baltimore. In May, 1838, he went to Europe seeking aid. The governments there refused him funds or patents. In May, 1839, he returned to the United States and began an heroic struggle for recognition. During this period he often suffered for the barest necessities of life. Sometimes he could afford but a single meal in twenty-four hours.

El. [illegible] **Recognition from Congress.** Finally, after repeated disappointments, when Morse himself had almost given up hope, the House of Representatives of the Twenty-seventh Congress, on the last night of its session, March 3, 1843, by a vote of ninety to eighty-two, appropriated thirty thousand dollars for building a trial line between Washington and Baltimore. After the bill had passed the House, the outlook for its passage in the Senate was not bright. One Senator who was favorable to the bill advised Morse to "give it up, return home, and think no more of it." The bill had been made the object of opposition and ridicule; one prominent official, to show his contempt for the project, proposed that half the amount asked for should be used in mesmeric experiments.

Morse, believing that the Senate would defeat the appropriation, went to his lodging place to retire for the night. He found that after paying the amount he owed at the hotel, he would have less than forty cents left. Early the next morning information reached him that a little before midnight the Senate had passed the bill. Apparent failure had turned into victory; the fight was won.

Work was begun at once. On April 30 the line reached Annapolis Junction, twenty-two miles from Washington, and was operated with satisfactory results.

The First Message by Telegraph, 1844. "May 1, 1844, was the date when the Whig convention was to assemble in Baltimore, to nominate the candidates of that party for President and Vice-President. It was arranged between Morse and Vail that the latter should obtain from the passengers upon the afternoon train from Baltimore to Washington, when it stopped at Annapolis Junction, information of the proceedings of the convention and transmit it at once to Morse at the Capitol in Washington.

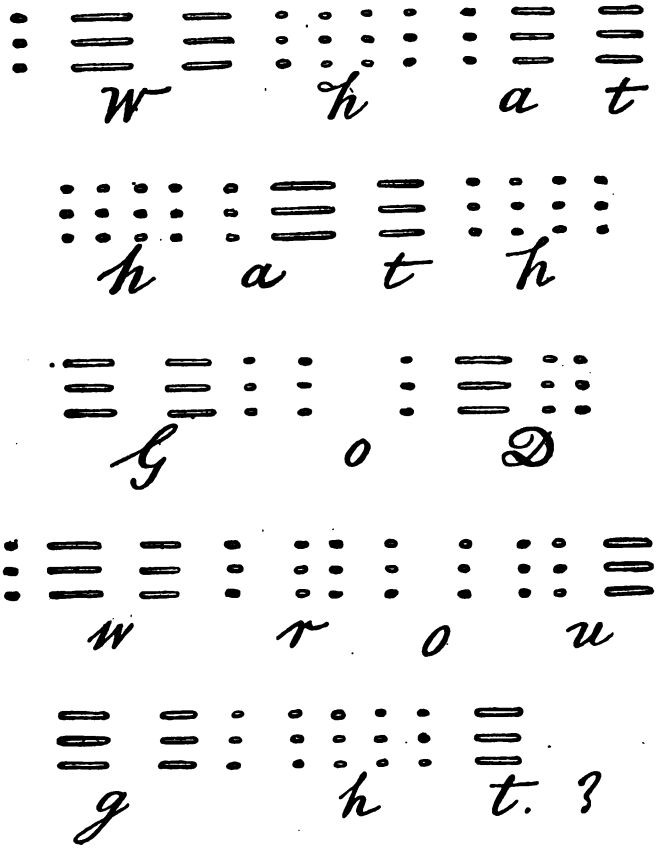
"The train arrived at half-past three o'clock and, from the passengers, among whom were many of the delegates to the convention, Mr. Vail ascertained that the convention had assembled, nominated the candidates, and adjourned. This information he at once dispatched to Morse, with whom was gathered a number of prominent men who had been invited to be present. Morse sat awaiting the prearranged signal from Vail, when suddenly there came from the instrument the understood clicking, and as the mechanism started, unwinding the ribbon of paper upon which came the embossed dots and dashes, the complete success of the telegraph over twenty-two miles of wire was established.

"Slowly came the message. When it had ended, Morse rose and said: 'Gentlemen, the convention has adjourned. The train bearing that information has just left Annapolis Junction for Washington, and Mr. Vail has telegraphed me the ticket nominated, and it is—' he hesitated, holding in his hand the final proof of victory over space, 'it is—it is Clay and Frelinghuysen.'

"'You are quizzing us,' was the quiet remark. 'It's easy enough for you to guess that Clay is at the head of the ticket, but Frelinghuysen—who is Frelinghuysen?'

"'I only know,' was the dignified answer, 'that it is the name Mr. Vail has sent to me from Annapolis

Junction, where he had the news five minutes ago from the train bound this way bearing the delegates.'



MORSE'S FIRST MESSAGE BY TELEGRAPH

"At that time the twenty-two miles from the Junction to Washington required an hour and a quarter for the fastest trains, and long before the train reached Washington the newsboys—enterprising even in those days—had their 'extras' upon the streets, their headings 'By Telegraph' telling the story, and being the first time that such a legend had ever appeared upon a printed sheet.

"A great and enthusiastic crowd greeted the delegates as they alighted from the train at the station. They were struck dumb with astonishment when they heard the people hurrahing for 'Clay and Frelinghuysen,' and saw in cold type before their very eyes the information which they supposed was exclusively their own, but which had preceded them 'by telegraph.' They had asked Mr. Vail at the Junction what he was doing when they saw him working the telegraph key, and when he told them, they joked about it most glibly, for no one had any belief in the success of the telegraph."

By May 23 the entire line was completed from Washington to Baltimore. On the next day, May 24, 1844, Morse from Washington sent to Vail at Baltimore the first message ever sent over the completed wire, "What hath God wrought?"

Developments in Telegraphy. Morse lived to see his system of telegraphy adopted by the United States, France, Germany, Denmark, Sweden, Russia, and Australia. Ninety-five per cent of all telegraphy is by his system. He finally received a large fortune from his invention. Unlike Columbus, Morse was honored in his lifetime for his achievement. Foreign nations bestowed upon him honors and medals, and in August, 1858, a convention of European powers called by Napoleon III at Paris gave Morse four hundred thousand francs (about $80,000) as a testimonial of his services to civilization.

In October, 1842, he laid the first submarine telegraph line. It was across the harbor of New York. Later he assisted Peter Cooper and Cyrus W. Field in their efforts to lay the first Atlantic cable. Honored by all the civilized world, he died in New York City April 2, 1872.

At first only one message could be sent over a wire at a time. Now several messages may be transmitted in opposite directions over the same wire at the same time.

The Telegraph Alphabet. In the Morse system the alphabet is represented by combinations of dots and dashes. The dots denote short currents of electricity flowing through the wire; the dashes, longer ones. Credit for the alphabet really belongs to Vail; Morse had devised a somewhat complicated system, but Vail invented the dots and dashes. He discovered that *e* and *t* are the most frequently used letters. He denoted *e* by one dot, or one short current; *t* he indicated by one dash, or one long current. The other letters are denoted by dots and dashes, as *a*, one dot and one dash; *b*, one dash and three dots, etc.

Cyrus W. Field and the Trans-Atlantic Cable. One of the most striking illustrations of the power of perseverance is the successful struggle of Cyrus West

Field in laying the Atlantic cable. Mr. Field was born in Stockbridge, Massachusetts, November 30, 1819. His schooling, which was slight, was secured in his native town. When he was fifteen years old, he secured a position in a business house in New York City at a salary of fifty dollars a year. He subsequently founded a prosperous business in the manufacture and sale of paper.

CYRUS W. FIELD

In 1854 Mr. Field's attention was directed to an attempt to lay an electric cable at Newfoundland, which had failed for want of funds. The idea of laying a cable across the Atlantic occurred to him. He laid his plans before a number of prominent citizens of New York. On four successive evenings they met at his home to study the project, and they finally decided to undertake it. On May 6, 1854, a company was organized to lay the cable, with Peter Cooper as president.

The next twelve years Field devoted exclusively to the cable. He went to England thirty times. The first cable was brought from England and was to be laid across the Gulf of St. Lawrence. Forty miles had been successfully laid, when a storm arose and the cable was cut in order to save the ship. Then came a year's delay. Meantime the bottom of the sea was being explored and a vast tableland was discovered stretching from Newfoundland to Ireland.

Field went to England, where he had little difficulty in organizing a company, and work was then begun on the construction of a new cable. Next he laid his enterprise before Congress, and asked for money. An appropriation bill was finally passed in the Senate by a majority of one, and was signed by President Pierce on March 3, 1857, the day before he retired from office. Field returned to England to superintend the construction of the cable and to make preparations for laying it. At last it was ready, tested, and coiled on the ship. On August 11, 1857, the sixth day out, after three hundred and thirty-five miles had been laid, the cable parted.

The Laying of the Cable. Field came back to

America and secured from the Secretary of the Navy the vessels needed for another trial. On June 10, 1858, the United States steam frigate *Niagara,* then the largest in the world, and the British ship *Agamemnon* set out from opposite shores, bound for mid-ocean. The vessels met, and the two sections of the cable were spliced; then they began laying it toward both shores at the same time. After a little more than a hundred miles had been laid, this cable parted in mid-ocean, and Field hurried to London to meet the discouraged directors.

On July 17, the ships set sail again for mid-ocean. The cable was spliced in fifteen hundred fathoms of water and again the ships started for opposite shores. Field was on the *Niagara* headed toward Newfoundland. Scarcely any one looked for success. Field was the only man who kept up courage through this trying period. On August 5, 1858, he telegraphed the safe arrival of the ship at Newfoundland. The shore ends of the cable were laid and on August 16 a message from Queen Victoria of England to President Buchanan flashed under the sea. There was great excitement everywhere. The two worlds had been tied together with a strange electric nerve.

On the evening of the first of September a great ovation was tendered Field in New York. National salutes were fired; processions were formed; there was an address by the mayor, and late at night a great banquet. While the banquet was in progress, the cable parted.

Everyone except Field was disheartened. He went to work again, and during the next five years, the long years of the Civil War, he labored unceasingly. A larger cable with a greater resisting force was made. On the twenty-third of July, 1865, the steamship *Great Eastern* began another attempt to lay the cable. When it was within six hundred miles of Newfoundland, the cable parted again. For nine days attempts were made, in two and a half miles of water, to grapple the cable, splice it, and continue the work of laying it. Three times the cable was grappled, but the apparatus on the ship was not strong enough to hoist it aboard.

Still Field never faltered. Another British company was formed and another cable was constructed. The *Great Eastern* was again loaded and on July 13, set sail westward laying the cable.

The First Message by Cable. After an uncertain voyage of two weeks the *Great Eastern* arrived at Newfoundland, and the undertaking had again been successfully accomplished. Field telegraphed his arrival as follows: "*Heart's Content, July 27, 1866.* We arrived here at nine o'clock this morning. All well. Thank God, the cable is laid, and is in perfect working order. Cyrus W. Field."

Twelve years of unfaltering perseverance had won. Honors were heaped upon Field. Congress voted him a gold medal and the thanks of the nation. The prime minister of Great Britain declared that only the fact of his being the citizen of another nation prevented his receiving the highest honors in the power of the British government to bestow. The Paris "Exposition Universelle" of 1867 honored him with the Grand Medal, the highest prize it had to give.

Mr. Field was afterward interested in the laying of cables connecting Europe, India, China, Australia, the West Indies, and South America. In 1880–81 he made a trip around the world, full of satisfaction in his own part in making a new era of the world's civilization. He died at his home in New York on July 11, 1892.

The Telephone. In 1819 Sir Charles Wheatstone, an Englishman, invented an instrument popularly known as the "magic lyre," but which he called the telephone. The first part of this word is the same Greek adverb *tele* that is found in *telegraph.* The *phone* is from another Greek word meaning "to sound." To *telephone,* therefore, means "to sound afar." The use of the English word *telephone* by Wheatstone is historically the first appearance of the word in our language. His device did nothing but reproduce music by means of sounding boards. The inventor of the modern telephone is Alexander Graham Bell.

Bell was born in Scotland in 1847. In 1868 he came to Canada for his health, but he soon moved to Boston, where he became a teacher of deaf mutes. In 1874, at the suggestion of the Boston Board of Education, he began some experiments to show to the eye the vibrations of sound, for the use of the deaf and dumb. The results of these experiments convinced Bell that articulate speech could be transmitted through space. Early in 1876 he completed the first telephone. The same year he exhibited it at the Centennial Exposition at Philadelphia, where it was pronounced the "wonder of wonders."

He filed application for a patent on his invention at the Patent Office in Washington, February 14, 1876. It is a singular fact that another application for a patent on the telephone was received at the Patent Office a few hours later on the same day from Elisha Gray, an electrical inventor of Chicago. The patent was issued to Bell, not because his invention was superior in merit to Gray's, but on the ground that his application was received first.

Wireless Telegraph and Telephone. Wireless telegraphy is based on a principle discovered and announced by the English scientist, Michael Faraday; namely, that heat, light, and electricity are transmitted by ether waves, and that these ether waves permeate all space.

The first to demonstrate the practical operation of wireless telegraphy was Guglielmo Marconi, an Italian. In 1890 he undertook experiments to prove his theory that the electric current readily passes through any substance, and when once started in a given direction follows a direct course without the aid of a conductor. Marconi made the first practical demonstration of wireless telegraphy in 1896. In March, 1899, he sent a wireless message across the

English channel from France to England. In December, 1901, he began his first experiments in wireless telegraphy across the Atlantic. In December of the following year the first official trans-Atlantic wireless message was sent.

Now wireless telegraphic messages are sent regularly to and from moving ships in mid-ocean, and across the three thousand miles of the Atlantic between Europe and America.

X **The Effect of the Telegraph and the Telephone.** The business world has been revolutionized by the invention of the telegraph and the telephone, and now the wireless is changing conditions still further. These changes have taken place within the memory of many men now living. Sixty years ago our grandfathers waited days and months for news of the world such as we now receive in twenty-four hours or less. In our morning papers we learn of events that occurred the day before in Europe. Such news took weeks to reach New York before the construction of the cables. News of wars and rumors of wars, of the condition of the crops, and of unforeseen catastrophes which are of interest to all, come to us at once.

Less than forty years ago it would have taken you two days to send word by mail from New York to a relative in Chicago, telling him that you were ill and needed him. If a man at that time wished to make an appointment with a friend in a distant part of the city, he was compelled to send a letter or a messenger; now he can telephone and make an appointment, or instead of seeing his friend he can talk with him by telephone. So it is in business; much that took hours, days, and weeks to arrange may now be attended to in a few minutes. As a result, everything in the business world moves more rapidly, and much more is accomplished in a business day than could have been attempted by those who lived fifty years ago.

One of the most important results of the telegraph has been the advance knowledge of the weather which we receive in our newspapers. Weather reports from all over the country are received by telegraph at Washington each day, and from these reports is made a forecast of what the weather will be for the following day. These forecasts are sent all over the United States and, by means of wireless telegraphy, they are reported also to ships at sea. By this same means, ships in danger at sea can call for help from other vessels or from the shore, and can warn each other of impending danger. In this way the sea has been robbed of many of the terrors which it had for the traveler in the last century.

These two great inventions, the telegraph and the telephone, have done more than any other thing to make possible the continued union of the United States. The states most widely separated are in constant touch with each other and false rumors are quickly corrected, so that no cause of idle dissension may arise. Every day the people of each state know what the people of the other states are doing. All can thus work together for the common good, the good of the nation.

XXIII

THE SEWING MACHINE

The Invention of the Sewing Machine. From earliest times until the middle of the nineteenth century, sewing by hand was the only means of making clothes. A few embroidery machines were patented in England in the eighteenth century and one or two crude and unsuccessful attempts were made to invent a sewing machine. It was not until 1846 that a patent was granted to Elias Howe for the first successful sewing machine. Though several improvements have since been made in it, the first sewing machine had all the main features of the modern perfected product.

The Use of the Sewing Machine. The sewing machine first found its way into the home, but soon the idea was applied to larger machines for factory use for the manufacture of clothes of all kinds. The next step was a machine for sewing shoes. Now this machine has been so improved that factories can turn out millions of pairs of shoes each year. Of course the machine which is worked by the feet is found only in the home or the small factory, for it has been displaced by sewing machines run by electricity or, in the large shoe factories, by machines run by steam.

The Effects of the Sewing Machine. Before the invention of the sewing machine, all clothes were made by hand, with the result that they were crude and expensive. The poor man could afford only clothes of the roughest kind and these were mostly made in his own home. The wealthy depended on tailors and paid extraordinary prices for their clothing.

ELIAS HOWE

But what a change to-day! Good clothes are within the range of almost every one. They are made in such large quantities that, compared with the cost seventy-five years ago, their present cost is inconsiderable.

And so it is with shoes. In the old days there were two kinds of shoes. The hand-sewed shoes were very expensive, costing from eight to twelve dollars a pair. The cheaper kind of shoes were held together by pegs that came through the shoe and hurt the feet. The upper part of the shoe was crudely sewed with cord or thongs. To-day we can purchase a good serviceable pair of shoes for one quarter of what the expensive shoes of seventy-five years ago cost.

The sewing machine, therefore, is another invention which contributes to the comforts and conveniences of our daily life. It has brought within the reach of every one things which were enjoyed only by the wealthy in the days of our great-grandfathers.

XXIV

ANÆSTHETICS

Surgery Before the Nineteenth Century. For centuries, step by step, the knowledge of the human body gradually increased. Medicine has been known in some form as far back as history goes. But the great handicap which doctors and surgeons had to overcome was the fact they could not examine a patient internally without causing him great pain.

It was therefore impossible for them to discover the cause of many diseases. They had no means of rendering a patient unconscious, so that even when a man's leg was cut off he was entirely conscious of what was being done and suffered terribly.

DR. WILLIAM T. G. MORTON

Anæsthetics. An anæsthetic is a drug or gas given to a patient to make him insensible to pain. The first man who seems to have thought of such a possibility was Joseph Priestly, who lived during the latter part of the eighteenth century. His investigations in chemistry led him to believe that certain gases would be of value in surgery, but he never carried his investigations far enough to put his ideas into practical use.

In 1800 Sir Humphrey Davy experimented with what is called "laughing gas" and discovered that it could be used as an anæsthetic. He suggested its use in surgery, but for nearly half a century his suggestion passed unheeded. Other scientists experimented with greater or less success, but the credit for the practical introduction of anæsthetics into surgery belongs to Dr. William T. G. Morton, an American dentist.

In the days before the use of anæsthetics, the operations of dental surgery were attended by much pain. Dr. Morton began seeking some means for lessening the pain. In the course of his investigations, he learned of the effects of sulphuric ether as a local anæsthetic, and frequently used this drug in minor operations. On one occasion he applied it with unusual freedom in the treatment of a very sensitive tooth. He noticed that the tissues were completely benumbed by the ether. Then he conceived the idea of bringing the entire nervous system under the influence of the ether, so as to produce temporary insensibility.

The most serious problem with which he had to deal was the manner of applying the ether. Although the soporific tendencies of both ether and nitrous oxide gas were well known, it had not been proved that they could be inhaled in large quantities, or that they would render the patient completely insensible. After a long series of experiments with various animals, Dr. Morton succeeded in fully establishing this power of either.

On October 16, 1846, he made his first public demonstration of the new discovery in the operating room of the Massachusetts General Hospital, in Boston, when he painlessly removed a tumor from the jaw of a patient. This operation was wholly convincing to the medical profession, and created profound public interest.

Ether, which was the drug used by Dr. Morton, was the first really successful anæsthetic. A year after its discovery, Sir J. Y. Simpson of Edinburgh, Scotland, discovered the anæsthetic power of chloroform. Other drugs with similar effects have been discovered since, but these two are still most commonly used.

The Value of Anæsthetics. It is difficult for any of us who have not suffered terrible pain to realize what the discovery of anæsthetics meant to the world. Fifteen years after its discovery the great Civil War broke out. During that terrible conflict, the wounded were often saved by the use of ether. It relieved the pain of the wound until it could be dressed and cared for. It made it possible to perform surgical operations on the field of battle and thus save the soldier's life.

The great vital result has been that the knowledge of the human body has grown by leaps and bounds during the last seventy years. Doctors have been able to cut open a living body to determine the cause of disease, and have learned how to prevent or cure some diseases without operation, because of their increased knowledge. Many operations which were previously impossible, are now safe and simple. No other man that ever lived has saved the world so much pain as Dr. Morton.

XXV

SANITATION AND HYGIENE

x **Living Conditions Long Ago.** With our knowledge of how to care for our health, such as is taught in every school to-day, it seems strange to think that less than one hundred and fifty years ago this knowledge was very limited. Such simple things as pure water, pure milk, good sewers, proper heating, and proper ventilation were matters that received very little consideration.

x **The Water Supply.** In our homes to-day we can turn on the water at a faucet and have plenty of water for bathing, drinking, and washing at a very small cost. In the days of our forefathers, people were almost entirely dependent on wells, unless they were so fortunate as to be near a river or a spring. It is true that in the days of the greatness of Rome, that city was provided with viaducts which brought a large supply of water, but in most of the cities of Europe, and in our own country during its early times, such things were unknown. There was, moreover, no way in which the water could be forced to the place where it was needed.

How different to-day! New York City receives its water from a source miles and miles away. The source of this supply is carefully guarded from pollution of every kind, thus reducing the danger of typhoid, which often is caused by impure water. In the old days, laws were sometimes made to protect the source of the water supply, but they were not strictly enforced. Now, however, we have the laws, and they are vigorously enforced.

Sewers. There has also been a marked advance in the disposal of waste. In the old days, except in the case of ancient Rome, the sewers were largely open, that is, not buried beneath the earth. These open sewers spread disease and pestilence, and the waters into which they emptied were polluted. To-day we have in New York City a vast system of underground pipes through which the waste is carried into the river. This eliminates the danger of the open sewer, but does not correct the evil of the polluted river. In other places, the waste is denatured by a chemical process and all danger is thus eliminated.

Milk. Pure milk is one of the most important things that affect the health. In recent years we have discovered that impure milk may carry many different diseases, such as scarlet fever, typhoid, and tuberculosis. Laws have now been passed compelling the inspection of dairies and the proper care of milk up to the time of its delivery to the consumer. The vast importance of this has been proved by the decrease in the death rate of infants, who are most easily affected by bad milk.

Heat and Ventilation. It is only within the last century that methods of heating have approached their modern state. Open fires were formerly the only means of keeping a house warm. These open fires are bad, if used continually, for they sap the vitality of the air, and they are usually ineffective, for they heat only part of the room. This uneven temperature quickly causes colds, which are dangerous and weakening. To-day with the modern steam, hot-air, and hot-water heating systems it is possible to keep a whole building at an even temperature in cold weather.

Closely connected with the matter of heating is that of ventilation. Probably because of the poor means of heating, people of a hundred years ago were apparently afraid of allowing fresh air in the house in winter. The result was that the air in a room became "dead" and dangerous to the lungs. We now know that fresh air is a necessity and that, especially when we sleep, we must keep a circulation of fresh air.

Quarantine. Until a few years ago the great ports of the world, especially those in the warmer climates, were subject nearly every year to outbreaks of contagious diseases, such as yellow fever, typhus, cholera, smallpox, and the bubonic plague. To prevent ships from other lands from bringing such diseases into the United States, the government has established a quarantine station at each port. Connected with these stations are doctors who board each incoming ship and examine the passengers for any trace of a dangerous contagious disease. In this way the epidemics, so common before, have been almost eliminated.

The Mosquito and the Fly. While the quarantine prevents the importation of disease, we have within the country two pests which cause and spread contagion—the mosquito and the fly. The mosquito, born in dirty water, often takes from its birthplace the same dangerous germs which would come to us if we drank the water. If a mosquito or a fly lights on a person who has a contagious disease, it is likely to carry the disease to other people.

As the mosquito comes largely from swamps and other places containing stagnant water, the government has systematically sprinkled petroleum over such places located near large towns or cities. The petroleum kills the eggs of the mosquito. The eggs of the fly may be hatched almost anywhere, so that it is a more difficult problem to destroy this pest.

Vaccination. For many centuries Europe was visited by a series of plagues which carried off thousands of people. The principal cause of these plagues seems to have been smallpox. People felt helpless before its power. No means was known of combating it. In 1796 Edward Jenner, an English physician, discovered that by treating the blood with the germs of smallpox taken from an animal, he was able to protect his patient from the disease. This discovery was developed into the modern method of vaccination. The result has been that the disease has decreased wherever vaccination has been used. To-day the death rate from smallpox is less than one tenth of one per cent of what it was forty years ago.

Asepsis. With the advancement of medical knowledge, it became apparent that some means must be found to prevent blood poisoning in a wound. Many people died from blood poisoning who would not otherwise have died from their wounds. The doctors set themselves to cure this evil. They discovered that certain acids and combinations of acids may be safely used to cleanse the wounds and also the instruments used by surgeons in operating. These acids kill the germs. This method of sterilizing is called asepsis.

Hygiene. In personal habits, the intelligent person to-day is far more careful than our ancestors were. The ease with which we may obtain water has made possible the frequent bathing which is necessary to good health We have learned the danger of spitting in public places, and in fact have made laws which forbid it. We have learned how to care for the teeth and mouth, and have thus removed one of the greatest sources of disease. All these things have helped to raise our life to-day to a higher plane, to make our surroundings pleasanter and our health more secure.

Our Responsibility. It was excusable in the time of limited knowledge of the care of health, for people to be negligent about things which we now know are essential. But we are living in an age of knowledge of such things, and we owe a duty, in sanitation and hygiene, not only to ourselves but to those with whom we associate.

XXIV

The Calendar

The Roman Calendar. If you were a Roman boy or girl living in the first century, you would have to set your brains to working very quickly, if some one should suddenly ask you the day of the month. In those times the months were divided in a very confusing way. The first day of the month was called the *calends;* the 13th or 15th was the *ides;* and the *nones* were the ninth day before the ides. The other days of the month were numbered from the next succeeding calends, nones, or ides. For instance, the day which we call January 14th, they called the 19th before the calends of February.

The Julian Calendar. The solar year is a natural period and indicates the time taken by the earth in making its revolution around the sun. The calendar year, or civil year, has not always agreed with the solar year; that is, the seasons of the year did not always come at the same period. In the days of Julius Caesar, the real season of spring occurred in what the calendar called summer. Caesar reformed the calendar in 46 B. C. and introduced our present arrangement of having three years of 365 days followed by one of 366 days. He also divided the year into months, nearly the same as at present. It was intended that the months of 30 and 31 days should alternate, but the Emperor Augustus insisted on giving his month of August as many days as Julius Caesar's month of July, so that we have two months of 31 days each in succession.

In leap year the additional day was given to February, by calling the fifth day before the calends of March a *second sixth;* hence leap year is still called in the almanacs a *bisextile year*.

This calendar of Julius Caesar, known as the Julian calendar, was used in all Europe until 1582, and is still used in the Russian Empire. It makes the year 365¼ days long, which is about eleven minutes too long; this error in reckoning has now amounted to about twelve days.

The Gregorian Calendar. In 1582 Pope Gregory XIII issued an edict ordering October 5th of that year to be called the 15th, and stating that the years 1700, 1800, and 1900 should not be leap years. This is called the Gregorian calendar.

This Gregorian calendar was soon adopted in the

Catholic countries. In the Protestant states of Germany it was partially adopted in 1700, but not wholly adopted until 1774. The change from Julian to Gregorian reckoning was made by Act of Parliament in Great Britain, in September, 1752, the 3d of the month being called the 14th. Now, with the exception of Russia, the Gregorian calendar is almost universally in use throughout the civilized world.

IMPORTANT DATES

1440	Printing with movable type was invented.
1492	Columbus discovered America.
1588	The English under Drake defeated the Spanish Armada.
1607	The first permanent settlement in the United States was made at Jamestown.
1609	Henry Hudson discovered the Hudson River.
1619	Slavery was introduced into the American colonies.
1620	The Pilgrims settled at Plymouth.
1623	The Dutch settled at New Amsterdam.
1664	The English captured New Netherlands and changed the name of the province to New York.
1759	The French surrendered Quebec to the English.
1769	Watt invented the steam engine.
1776	The American colonists signed the Declaration of Independence.
1776	The British defeated the American forces in the Battle of Long Island.
1777	Burgoyne surrendered his army at Saratoga.
1783	The Treaty of Peace between the United States and Great Britain was signed at Paris.
1789	Washington was inaugurated as the first President of the United States.
1792	The cotton gin was invented.
1803	The Louisiana Territory was purchased from France.
1807	The *Clermont*, the first successful steamboat, made its first trip up the Hudson.
1819	The Florida Territory was purchased.
1825	The Erie Canal was opened.

1825 The steam locomotive was invented.

1840 The McCormick harvester was introduced into general use.

1844 The first message was sent by telegraph.

1846 The sewing machine was invented.

1846 The value of ether as an anæsthetic was discovered.

1848 Gold was discovered in California.

1861 The Southern states seceded and organized the Confederate States of America.

1862 The Federal battleship, *Monitor*, defeated the *Merrimac* in the first battle of ironclads.

1863 Lincoln issued the Emancipation Proclamation.

1863 The Federal armies won decisive victories at Gettysburg and Vicksburg.

1876 Communication by telephone was invented and perfected.

1898 The United States acquired colonial possessions as a result of the War with Spain.

1899 The first message was sent by wireless across the English Channel.

1903 The first aeroplane driven by motor power was successfully used.

1914 The Panama Canal was opened.

CIVICS

THE BEGINNINGS OF NATIONAL GOVERNMENT

I

The Beginnings of Government in America. After America had been settled for a good many years, there arose quarrels between the people of the colonies and the government of England over the rights and privileges of the colonists. The English king insisted upon having his own way entirely. Of course the colonists could not permit this, especially as it was almost their very existence that was threatened; and so, as you know, they rebelled and began a war for independence.

Adoption of the Articles of Confederation. At this time, each of the thirteen colonies had a government consisting of a governor and an Assembly made up of men from the different sections of the colony.

Just as soon as the colonies declared their independence, each of them became an independent state with the right to make its own laws. But to retain this right, they had to prevent Great Britain from defeating them in the war.

None of the colonies were strong enough to fight single-handed against England, and so they chose a committee of delegates from all the colonies, to decide upon a form of government which would serve to unite the colonies against England, and enable them to work harmoniously together in the war. Thus we see how, almost unconsciously, we give up a certain amount of independence and so-called "freedom," for the greater values of mutual protection and society.

This committee drew up a set of laws, which were called the "Articles of Confederation and Perpetual Union between the States," meaning the thirteen original colonies.

Power Given to the States. During the progress of the War of Independence, these Articles were fairly satisfactory, because the people were bending all their efforts towards only one thing—the defeat of the British—and when people are bound together by a mutual and all-absorbing aim, they forget minor differences. But long before the war was over, it became apparent that there was no real unity among the colonies, and no real government. Each state felt itself to be entirely free from all the others. Each claimed the right to coin money, to levy taxes, to raise an army, and to charge a duty upon articles of merchandise coming from European countries, or even from the other states. It was a partnership of states, each of which was entirely independent. There had been no union, nor even a nation; and whereas the Articles talked much about individual rights, they said scarcely a word about common duties.

Powers Denied the Continental Congress. The colonists had refrained from giving any real power to the central government. It could do very little. It could not support itself unless the states chose to furnish it with money; it could not make war unless the states provided the troops. More than once, Congress was unable to proceed to business at the proper time, because there were not enough delegates from the states to transact necessary business or to settle important questions. Congress could make treaties with other nations, but these were not binding on the several states; it could propose laws, but unless every state agreed to them, these laws were of no effect.

Need of a Stronger Central Government. Not only were the states separated, and without any mutual bond, but there was much ill feeling among them. The weak ones feared the strong, and the strong states were jealous of each other. Moreover, Congress was in difficulties. It had incurred heavy debts to carry on the war, but had no power to raise money with which to pay them.

Finally, conditions became so bad that a convention of delegates from every state was called, for the purpose of determining upon some better plan of government. From the bitter experiences of the past—the wrongs they had suffered under English rule, and the weaknesses and faults of the

Articles of Confederation—the convention produced the Constitution under which our present form of government became established, and which still remains the basis of our laws.

THE CONSTITUTION

II

The Nature of the Constitution. The Constitution is the basis of our government. It states the form of government, the several parts and the duties of each, and the powers which the central government shall possess. In the preamble, as the first paragraph is called, the statement of the purposes for which the Constitution was written, constitutes a guide to the laws which Congress may pass.

The preamble reads: "We, the people of the United States, in order to form a more perfect union, establish justice, insure domestic tranquillity, provide for the common defense, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this Constitution for the United States of America."

Right here was the great step taken in beginning a new kind of government, one which should be entirely under the control of the people—which should have to act as the people willed, and which should make only such laws as the people desired.

It had happened several times in history that a nation had attempted to establish a government of the people, but never had such an attempt been successful for any length of time. The ancient Greeks had such a government, but it failed because Greece was divided into states which retained their sovereignty and were jealous of the government. The Romans also attempted the same thing, but with no better success. One man would get control of the army and then would become a king or a tyrant.

The chief reason for this was that neither of these nations had made provision for the necessary restrictions upon the power of the central government, so that it should not eventually usurp all the power, and take away all personal rights. And, on the other hand, the government was not given power enough so that it would be stronger than any of its parts, and able to hold them together under any stress of circumstances.

Division of Power. The faults of the early Articles were remedied by the adoption of the Constitution. The power was divided between the central government and the state governments in such a way that, while the states were still practically self-governing so far as their own internal affairs were concerned, they had to obey the central government in certain respects in which the interests of other states were also concerned. Under the Articles of Confederation, each state could act as it wished; but when the Constitution was adopted, each state gave up to the central government certain of its rights, retaining certain others with which the central government could not interfere.

III

Powers Delegated to Congress. For example, the states delegated to the central government the following powers, none of which could ever again be exercised by a state.

Congress shall have power

(1) To lay and collect taxes, duties, imposts, and excises.

(2) To borrow money on the credit of the United States.

(3) To regulate commerce with foreign nations, and among the several states.

(4) To establish a uniform rule of naturalization, and to regulate immigration throughout the United States.

(5) To coin money, regulate the value thereof and of foreign money, and fix the standard of weights and measures.

(6) To provide for the punishment of any one who should counterfeit the securities or current coin of the United States.

(7) To establish post offices and post roads.

(8) To promote the progress of science and useful arts, by allowing authors and inventors to keep, for a limited time, the right to their discoveries and writings.

(9) To declare war, and raise and support an army and a navy.

(10) To make treaties with foreign governments; send representatives to foreign countries; and protect American citizens and American business abroad.

(11) To establish courts below the Supreme Court.

(12) To take a census of the people.

Powers Denied to Congress. On the other hand, the states made sure that the liberties of the people and their personal rights should never again be taken away as they had been in the past, by placing the following limitations upon the powers of Congress.

(1) The privilege of the writ of habeas corpus shall not be suspended except when, in case of rebellion or invasion, the public safety may require it.

(2) No bill of attainder or ex post facto law shall be passed.

(3) No capitation, or other direct tax, shall be laid except in proportion to the census.

(4) No tax or duty shall be laid on articles exported from any state.

(5) No preference shall be given by any regulation of commerce or revenue to the ports of one state over those of another; nor shall vessels bound to, or from, one state be obliged to enter or pay duties in another.

(6) No money shall be drawn from the treasury

but in consequence of appropriations made by law; and a regular statement and account of the receipts and expenditures of all public money shall be published from time to time.

(7) No title of nobility shall be granted by the United States.

Powers Denied to the States. Further to insure the central government in its powers, and to prevent the possibility of misunderstanding between the several states, or between any state and the central government, the Constitution definitely states certain things which no state may do.

(1) No state may enter into any treaty with another nation, coin money, pass any ex post facto law, bill of attainder, or grant any title of nobility.

(2) No state shall lay any imposts or duties on imports or exports.

(3) No state may keep troops under arms, or ships of war, in time of peace; or engage in war, unless invaded or in imminent danger such as will not admit of delay; or enter into any compact with another state or a foreign power.

Thus, in this remarkable instrument the rights and powers of both state and central government are clearly separated and defined; and it leaves to the states, cities, counties, and towns supervision over matters that are of interest only to their own inhabitants.

THE LEGISLATIVE DEPARTMENT

IV

The Three Divisions of Government. All governments must have three distinct powers: the legislative, which makes the laws; the executive, which carries out the laws; and the judicial, which interprets the laws, and applies them to individual cases.

In an absolute monarchy, these powers are all exercised by one person. He may make the law, may interpret it, and may apply it. He may do as he likes, for he is the only lawmaker. But in constitutional governments, these duties are given to different persons, or sets of persons.

In a constitutional government, these three powers rest in three different bodies of men; yet, unless care is taken to prevent it, these different bodies might combine to rule as they pleased.

What is a Republic? When the framers of the Constitution made the new form of government, they arranged that the selection of men to fill those three branches of government should occur at different times, for different terms of office in each case; and also, by a series of checks, they made it practically impossible for one branch of government to obtain control of another.

The officers of all branches of our government are chosen, either directly or indirectly, by the people. It would be an utter impossibility for all the citizens of even a much smaller country than ours, to meet to discuss and determine on its laws, so the people choose representatives to attend to these matters. These representatives are chosen, in each state, at elections at which every male citizen of the state, who is twenty-one years of age and a registered voter, has the right to vote. In several states the right to vote has been extended to women also.

The Legislative Branch. The Constitution provides that the legislative branch of our government shall consist of two houses—the Senate, and the House of Representatives. Members of either House are called Congressmen.

The Senate. The Senate consists of two Senators from each state, who shall be chosen by the direct vote of the people of the several states. Each Senator holds office for six years, except in the case of a new state, when the Senators are chosen, one for two years, and one for six years, or for the short and the long term, as they are called. Only one United States Senator is chosen during the same year from any state, unless as stated above in the case of a new state, or in case of a vacancy.

The Senators are divided into three groups; and one group, one third of the Senators, retires every other year.

The House of Representatives. The Representatives are elected directly by the people every second year, and they hold office for two years. The number of Representatives to which each state is entitled, is determined by the population of the state, on the basis of one to about every 212,000 persons.

In thus having a short term for their Representatives, the people prevent them from conspiring against the liberties of the citizens. In case a Representative does not satisfy the electors of his district, he will not be reëlected. Thus the membership of the House may be changed practically at any time. The long term for the Senators, however, gives that body a greater stability, dignity, and responsibility. The two bodies working together make an almost ideal arrangement, one standing for stability, the other for change.

When and Where Congress Meets. Congress assembles at the capitol in Washington, D. C., at least once each year, on the first Monday of December, unless it shall by law appoint a different date.

Each House has the right to decide any question as to the qualifications or the election of any of its own members.

V

Introduction of the Bill. The manner of making the laws is carefully stated in the Constitution. When a proposed law is offered to Congress, it is called a bill. Every bill must pass each House by a majority vote of those present and be presented to the President for his signature.

Most bills may be introduced in either House, by a member of either House. Bills for laying taxes, however, all originate in the House of Representatives. The reason for this is that, as the people must pay the taxes, it seemed wise to the framers of the Constitution that the House most nearly representing them should impose the taxes. As the Representatives are nearer to the people than the Senators are, inasmuch as they have shorter terms, all bills imposing taxes should originate in the House of Representatives.

The Bill in Congress. When a bill is introduced, its title is read, and the speaker, as the presiding officer of the House is called, or the president of the Senate, refers it to the proper committee for examination. If a majority of the committee decide that the bill should be passed, they make this report to the House.

Copies of the bill are then printed for the members to read, and the bill is read again—this time usually in full. At this reading the bill is discussed, and perhaps amended and changed. At a third reading, a vote is taken on the bill as a whole.

If passed, the bill is sent to the other House, where it goes through the same process. If passed there, it is sent to the President.

The President's Veto. The President may or may not sign the bill. If he signs it, the bill becomes a law. If he refuses to sign it, or vetoes it (from the Latin word meaning "I deny"), he must return it to the House in which it originated, with his objections. If the bill again passes both Houses by a two-thirds vote, it becomes a law without the signature of the President.

Sometimes the President is willing that a bill should become a law, but does not want to sign it, for various reasons. In that case he may keep it for ten days, without either signing or vetoing it, and it becomes a law without his signature. Should the President receive a bill less than ten days before Congress adjourns, and neither sign nor veto it, the bill does not become a law. This is called a "pocket veto."

THE EXECUTIVE DEPARTMENT

VI

The President. The legislative department of a government makes the laws; the executive enforces them. The President of the United States is the chief executive. He is elected by the people, though not directly, and holds office for four years.

The Electing of the Electors. When your father votes, he does not vote directly for the President, but for men called electors, and it is these electors who vote for the President.

Our forefathers had great difficulty in deciding how the President should be chosen. They believed that, as the President was to be the chief ruler of the nation, more intelligence and wisdom were necessary in the choosing of him than the average person would be likely to possess. If, on the other hand, the choice were left to Congress, there was danger that the President would be under the control of Congress after his election.

It was decided to have each state select a number of men to be presidential electors, who should select both the President and the Vice President. The electors are elected by popular vote, each voter voting for as many electors as there are Senators and Representatives from his state.

The Voting of the Electors. On the second Monday in January following their election, these men meet at the capitol of their several states and ballot for candidates for President and Vice President. Lists of the candidates voted for are then made, and after the name of each is recorded the number of votes he received. These lists are sealed, and are sent to the president of the Senate at Washington.

On the second Wednesday in February, the Senators and Representatives meet in the House of Representatives. The lists are then opened and the votes counted. The person who has the majority of all the votes for President is declared elected, and the one who has the majority of all the votes for Vice President is likewise elected.

It has happened that the votes of the electors have been evenly divided between two candidates, or so divided between three or more candidates that no one has a majority. In such cases the Constitution provides that the House of Representatives shall elect the President. Only the three men that had the greatest number of the electoral votes can be voted for in such a case. Each state has one vote; two thirds of the states must vote, and a majority of the votes is necessary to make an election.

It was intended by the framers of the Constitution that the electors should be free to exercise their own judgment in electing a President; but to-day each political party chooses one candidate for President and another for Vice President, and also selects in each state members of its own party to be voted for as electors. Consequently, in voting for electors, the voter is practically taking away any freedom of choice from the electors, who are expected to vote for the candidates whom their party has named. Thus, in reality, the President and the Vice President are directly elected by the people, and it is practically known who is to be President on the day that the electors are elected.

No limit is placed by the Constitution upon the number of terms a President may serve. Washington served two terms and refused to accept a third term. Since then, it has become the general feeling that no President should serve more than two terms, and none has been elected more than twice.

VII

Duties and Powers of the President. The President is commander-in-chief of the army and navy, and of the state militia when it is being used in the actual service of the United States.

He has power to commute sentences, and reprieve or pardon persons who have broken the laws of the United States, and who have been convicted in United States courts or in army or navy courts-martial. But he may not exercise this power over offenders against state laws, or over persons who have been convicted in state courts.

The President has the power, by and with the consent and advice of the Senate, to make treaties with other countries, and to appoint ambassadors and other public ministers and consuls. A treaty is an agreement between two nations; and it is by treaties that questions of policy or of action in disputed cases between two nations are settled. Ambassadors and ministers are the representatives of one country at the capital of another; it is their business to look after the affairs of their country, in the country to which they are sent, and to care for the interests and the safety of their fellow countrymen in that country.

The President appoints, by and with the advice and consent of the Senate, the judges of the Supreme Court of the United States and of the District Courts. He also appoints thousands of officials in minor capacities throughout the country, such as postmasters, revenue officers, and clerks.

The President may at any time send to Congress information or recommendations on subjects of importance to the country. At the beginning of each regular session, he sends to Congress a long message in which he outlines the official action of the government during the time Congress was not in session, describes the condition of the country, and recommends needful legislation.

The President may, and frequently does, call a special session of Congress or of the Senate alone.

Besides these duties and powers, the President receives ambassadors and ministers from foreign countries when they arrive in Washington. By thus receiving these officials as his guests, the President recognizes the government from which they come, as a sovereign state.

Removal of the President from Office. The President may be impeached and, upon conviction of treason, bribery, or other high crimes and misdemeanors, he may be removed from office. This term, "high crimes and misdemeanors," is a phrase of the English common law, to include any unlawful act.

Any such charge against the President must be made by the House of Representatives. The President is tried before the Senate, and two thirds of the members present must favor conviction before he may be removed from office.

The Vice President. The Vice President is elected at the same time and in the same manner as the President, and his term of office is the same.

It is the duty of the Vice President to act as the presiding officer of the Senate. In case the President dies, resigns, or becomes incapacitated in any way from performing the duties of President, the Vice

President immediately takes the oath of office as President Beyond this the Vice President has no duties. He may be removed from office on the same charges, and in the same manner, as the President.

VIII

The Need for the President's Cabinet. A man who is conducting a large business finds that it is impossible for him to attend personally to all the details of the business, and so he employs other men to take charge of departments. For instance, in the large schools of New York City, there is so much to be attended to that the principal must have heads of departments to assist him. In the same manner, the President has to have assistants to attend to part of the executive affairs of the nation.

The Constitution states in Art. II, Sec. II, that "the President may require the opinion, in writing, of the principal officer in each of the executive departments, upon any subject relating to the duties of their respective offices." There are nine of these departments, and the men who have charge of them constitute the President's cabinet. They are appointed by the President and hold office subject to his will. They are the chief advisers of the President, and meet him for consultation in cabinet meetings at the White House, on Tuesdays and Fridays, at eleven o'clock. Each of these men manages his own department, subject to the laws of Congress and the direction of the President.

The official titles of the cabinet members are: Secretary of State, Secretary of the Treasury, Secretary of War, the Attorney-general, the Postmaster-general, the Secretary of the Navy, the Secretary of the Interior, the Secretary of Agriculture, and the Secretary of Commerce and Labor.

The Secretary of State. The head of the cabinet is the Secretary of State. He has charge of all our affairs relating to foreign countries. He attends to all communications between the United States and other countries, prepares treaties, has charge of all our ambassadors, ministers, and consuls, and receives the representatives of other nations and presents them to the President.

The Secretary of State is the keeper of the seal of the United States, with which all important papers are stamped.

Secretary of the Treasury. The Secretary of the Treasury has entire charge of the collection, care, and expenditure of the nation's money. Through officials of this department, all the money due to the government from taxes, customs, and other sources, are collected. This money, in gold, silver, and bills, amounting to hundreds of millions of dollars, is stored in vaults in the United States Treasury, or in one of its branches, until needed by the government.

One of the branches of the United States Treasury is in New York City, on Wall Street, and any one may go there during business hours and see the immense amount of money packed in bags, and piled up, exactly as you see bags of potatoes piled up in a storeroom. The only difference in their appearance is that the bags are much smaller, and many times heavier than bags of potatoes.

Besides attending to the financial affairs of the nation, the Secretary of the Treasury has charge of the erection of post offices, customhouses, and other government buildings, and of the coining and printing of money.

IX

The Secretary of War. The Secretary of War is the head of the War Department. He represents the President in his capacity of commander-in-chief of the army and navy, and even the commanding general of the army must obey his orders. This department has charge of all the forts and land defenses of the United States. These forts are chiefly located along the coast at the entrances to our large harbors.

The Army. The United States, unlike European nations, does not maintain a large standing army, but depends for its protection, in case of war, upon its militia.

Then too, in case of war, every able-bodied man between the ages of twenty-one and forty-five, who is a citizen of the United States, may be called upon to join the army. If he does not volunteer, he may be drafted, or forced to serve.

At the outbreak of the Civil War, the regular army consisted of less than twenty-five thousand men; and yet in three months we had raised and armed an army of over half a million.

The Military Academy. At the present day, it would be easy to raise as large an army as was needed, but such an army would be difficult to handle unless there were trained officers to lead it. At West Point, the government established a school where young men are educated and trained to be army officers. Students are appointed to this school upon the recommendation of Congressmen; and any boy of proper age, so recommended, who can pass the necessary examinations, may enter the military academy. After completing the four years' course he is graduated, and appointed to the army as a second lieutenant.

The Secretary of the Navy. The Secretary of the Navy presides over the Navy Department. He has charge of all affairs relating to vessels of war, the naval forces, and all naval operations.

In order that our ships may be safely navigated, it is necessary for them to be supplied with maps, charts, and other publications, and this is done through a bureau of the Navy Department called the Hydrographic Office. The department also maintains an astronomical observatory for the study of the stars, knowledge of which is so necessary to the proper navigation of vessels.

The Naval Academy. Just as the War Department maintains a school for army officers, so the

Navy Department has a school in which young men are trained to be officers in the navy. This school is situated at Annapolis, Maryland. The students are appointed on the recommendations of Congressmen, in the same manner as the cadets at West Point.

X

The Attorney-general. The Department of Justice is under the control of the Attorney-general, who conducts all the law business of the government.

He must investigate titles to all the lands bought by the United States; he must advise the President and the cabinet on any points of law that may arise in their departments; he must give legal opinions upon the meaning of any law when called upon by the President; and must conduct any lawsuits which the government may undertake.

The Postmaster-general. The Postmaster-general directs and manages the Post Office Department. He appoints all of the officers and employes of the department, except the assistant postmaster-generals and all postmasters whose salaries are less than $1000 per year.

Postal Rates. When the Post Office Department was first organized in 1794, the only method of carrying mail was by mail riders, who traveled over given routes as often as there was sufficient mail to make it profitable. At that time the rate of postage varied from six to twenty-five cents for every sheet of paper. To-day one may send a letter from one end of the country to the other, to any territory owned by the United States, to England, Canada, Mexico, Germany, or from one street in the town to another, for the same sum—two cents for each ounce or fraction of an ounce.

In every part of the land, even in the most remote, the department has established post offices; wherever there are people, there is always a post office close by, no matter how far away the place is, or how difficult it may be to reach, or what the cost may be of maintaining a post office there. Even in far northern Alaska, hundreds of miles over the snow and ice, the department has mail routes and offices, though it costs the government many dollars for every piece of mail carried—and it costs us but two cents to send.

The Parcel Post. In 1912 Congress passed a law which permitted the Post Office Department, after January 1, 1913, to send packages of various weights throughout the country at reduced rates. In order to determine these rates, the country was divided into zones and a certain amount was fixed as a charge for sending from one zone to another. Since the parcel post was started, new regulations have been made so that we can now send packages to the amount of fifty pounds anywhere in the so-called first or second zone. Packages up to twenty pounds in weight may be sent all over the country. A single pound of merchandise may be sent from New York to San Francisco for 12 cents; from New York to

Philadelphia for 5 cents. This method of shipping has been extended from merchandise to include food stuffs, and in fact almost anything that is ever shipped.

Mail Delivery. The Post Office Department contracts with railroads to carry the mails wherever possible, and with trolley lines, stages, and horseback riders where railroads do not go.

In the large cities and villages, the department distributes the mail at the homes or the shops and offices, several times each day. In the country, the department has established rural free delivery routes stretching from the towns out through the farming districts. Regular mail routes are arranged between this country and every foreign country, by means of the steamship lines.

Money Orders. Besides delivering our letters, papers, and packages, the Post Office Department maintains a service by which, through postal-notes, or money orders, we may send sums of money safely from one place to another at slight expense.

The Dead Letter Office. In Washington, the department has a bureau called the Dead Letter Office. A very large number of letters, papers, and packages are sent through the mails every day, with insufficient or wrong addresses. Such mail is always sent to the Dead Letter Office after it is found to be wrongly addressed, and every effort is made to locate either the sender or the one to whom the packet is directed. So expert have the clerks in this office become, that they succeed in delivering a very large part of this misdirected mail to its proper destination.

If you were handed a letter addressed to John Brown, Smith Street, United States, you would hardly know what to do with it; but the Dead Letter Office looks up all the Smith Streets in all the towns in the country. To one after another of these places the letter is sent, until it finally reaches its destination.

A Self-Supporting Business. To support properly such a great system costs a large amount of money. The receipts from stamps, etc., amount to a little over $266,000,000 per year, while the expenses of the department are about $262,000,000. Conditions were very different in the days before the Parcel Post was established, for then Congress had to appropriate about $10,000,000 yearly to make up the deficit.

XI

The Secretary of the Interior. As the nation grew, it soon became evident that there were a large number of affairs of national importance which could not be attended to by the departments already organized. There were also new matters coming up which had never been thought of when the executive departments were first established. So other departments were organized from time to time. One of these was the Department of the Interior, or the Home Department, which was organized to attend to the miscellaneous home affairs needing executive action.

The Secretary of the Interior superintends a very miscellaneous collection of affairs, some of them of the greatest importance to the country. He has entire charge of all public lands, their care, and their distribution for settlement. He controls the Pension Office, which pays out every year more than $150,000,000 to the soldiers and sailors who have lost limbs or health in fighting for the nation, or to their dependent widows and children. He is the nominal head of the Bureau of Education, which collects and distributes information concerning schools and education.

The Patent Office. The Patent Office is also under the direction of the Secretary of the Interior. A patent is a certificate given to the inventor of any new article, or of any new process of manufacture, granting him the exclusive use of it for a certain number of years, and protecting him from others who might wish to use it without paying the inventor. The object of this is to induce people to spend their time and money in an effort to improve old methods of doing things, or to discover new ones.

Similarly, the writer of a book is protected by a "copyright," which prohibits any one not authorized by the writer from printing or republishing his work.

The Indian Reservations. All matters relating to the Indians and their affairs, are under the direction of the Secretary of the Interior. By a law passed in 1871, the Indians were made the "wards of the nation"—that is, they are maintained at the expense of the government—and their interests were placed under the charge of a Board of Indian Commissioners, whose duty it is to oversee all expenditures of money made for the Indians, and to inspect the goods purchased for them. This board of commissioners oversees the feeding and clothing of the Indians, and maintains them upon specific tracts of lands called "reservations." On each of these reservations there is an agent of the government, and missionaries and teachers. Various schools are also supported in different parts of the country, where the Indians are taught both to work and to study.

So many are the matters intrusted to the Department of the Interior that no one building is large enough to contain it. Besides the Interior Building itself, the Pension Office, the Patent Office, and the Geological Survey each has a large building devoted entirely to its own affairs.

XII

The Secretary of Agriculture. The Department of Agriculture was created in 1899. Originally the work of this department was under the control of the Secretary of the Interior, but the work it did was of such a vast importance to the country that it was made a department by itself.

This department superintends all the agricultural interests of the country,—examines soils, distributes new and especially valuable seeds, and maintains experimental stations for testing the cultivation of plants, and laboratories where scientists experiment on remedies for insect pests and diseases of plants and trees.

The Weather Bureau. Besides these activities, the department maintains a Weather Bureau, which takes observations on the condition of the weather in all parts of the country, and studies the laws of storms, winds, cold, and heat. This bureau has its representatives scattered all over the United States, and receives daily reports from them at its headquarters in Washington. From these reports charts of storms, with their direction, strength, and probable duration, and the probable condition of the weather, are made out and distributed daily over the country.

These predictions are so accurate that millions of dollars are saved in the country annually through the work of this bureau. In case a severe storm is raging over the West Indies and is headed towards the north, the Weather Bureau telegraphs to its stations all along the coast, storm signals are set, and captains of out-going ships are warned against venturing out of port. Farmers also are greatly benefited by the reports of this bureau. By examining the forecast for the next day, the farmer can tell with considerable certainty whether or not, if he cuts his grain, he will have clear weather in which to harvest it.

Suppose you propose to go on a picnic on a certain day; you consult the paper to see what the weather is likely to be. The paper got its information from the Weather Bureau by telephone or telegraph.

XIII

Secretary of Commerce and Labor. In 1903 a further division of the work of the old departments was made, and a new department, the Department of Commerce and Labor, was established.

This department has charge of everything that relates to our commerce or to labor. It controls the Lighthouse Board, the Lighthouse Establishment, the Steamboat Inspection Service, the Bureau of Navigation, the Life-saving Bureau, the Coast Survey, the Bureau of Immigration, the Bureau of Labor, the Bureau of Statistics, the Census Bureau, the Fish Commission, and others.

Lighthouses and Life-saving Stations. Through the erection of lighthouses, the placing of buoys in the harbors to guide ships and prevent them from running aground on shoals and reefs, the straightening and deepening of channels, the inspection of vessels and of their machinery to prevent accidents, this department saves millions of dollars to the country every year, and greatly increases our commerce.

On every dangerous part of our coast and at various points in harbors, the department maintains life-saving stations. Each station is equipped with life-boats which are unsinkable. Large guns are provided by which life-lines are shot over stormy waters to shipwrecked vessels. By means of these, cables are drawn out to the ships, and then by the "breeches-buoy" the passengers are drawn ashore to safety.

The Labor Bureau. The Labor Bureau keeps track of labor conditions and aims to prevent strife between the employer and the employes. Through its efforts, much has been done to increase wages and to lessen the hours of labor.

The Census Bureau. The Census Bureau controls the taking of the census of the country. This is done every ten years, and its accuracy is of the utmost importance, because on the population of a state depends the number of Representatives it shall have in Congress, the number of its presidential electors, and also the amount of direct taxes which each citizen must pay.

At the same time, this bureau collects a vast amount of valuable information concerning the products of the country, the pursuits of the people, how the population is distributed, from what nationalities the people come, and many other similar facts.

Some idea of the work of the Census Bureau may be obtained from the fact that the last census report filled over thirty large volumes of printed matter.

THE JUDICIAL DEPARTMENT

XIV

The Supreme Court. The third of the three coordinate branches of the government is the judiciary. The highest judicial power is vested in the Supreme Court.

This plan of giving the judiciary a direct part in the government was an entirely new departure in government, and is, perhaps, the feature above all others that makes our plan of government stable and successful.

Need for Limitations on the Lawmakers. The framers of the Constitution were wise enough to see that any government of the people, even though representative, might easily be the worst kind of despotism, because the ignorant people are more numerous than the wise, and can control the whole machinery of government, unless some check upon their actions is provided. Any measure, however cruel or unjust, might be made a law by Congress, if a majority of the voters insisted upon it, and then it must be executed by the President.

Need for Correct Interpretation of the Law. Some kind of check upon the powers of the lawmaking body was therefore necessary; and this is provided by our written Constitution and by the Supreme Court.

We have seen that the Constitution places certain limitations upon the powers of Congress, and positively forbids the passage of certain specified laws. But it is a very easy thing, sometimes, to word a law so that its bad features might escape notice and unjust acts thus become laws. It is also possible that under certain circumstances Congress might attempt to defy the Constitution, or that corrupt legislators might pass a law which, while apparently fair, would have results which were not intended, and which would be against the spirit of the Constitution.

Again, the Constitution does not go into particulars as to the kinds of laws which may be passed, but is written in broad and general terms. Many elastic clauses, as they are called, permit wide differences in interpretation, and one part of the country might easily hold that the Constitution means one thing, while another part would claim that it means another. This has happened many times. and was the direct cause of our great Civil War.

The Place of the Supreme Court. The Constitution therefore provides that the Supreme Court shall be the sole judge of the meaning of the Constitution, and of whether any law passed by Congress is or is not constitutional. The people may even demand that Congress pass certain laws; but if the Supreme Court does not uphold the constitutionality of a law so passed, it is of no effect and cannot be enforced.

Thus the liberties of the people are protected, even against themselves; and the failure of the new plan of government, prophesied so freely by the leaders of other countries, was averted.

Officials of the Supreme Court. The Supreme Court consists of the Chief Justice and eight associate justices. They are appointed by the President, and their appointment must be confirmed by the Senate. This confirmation is intended to prevent the possibility of the President's appointing to the office a man who would agree to interpret the Constitution according to the wishes of the President, and thus endanger the safety of the republic.

The justices are appointed for life, unless their conduct while in office should be such as to require their dismissal. In that event they are impeached and tried before Congress, and removed if necessary.

Duties and Jurisdiction of the Supreme Court. All cases coming before the Supreme Court must be heard by at least six of the justices, and the decision of the majority is the decision of the court.

All cases affecting ministers, consuls, and other agents of the United States and foreign countries, and cases in which a state is a party, are heard before the Supreme Court.

Most of the business of this court is with cases brought up to it as the highest authority, from inferior courts of the United States, and is chiefly concerned with the jurisdiction of an inferior court, the constitutional law, the validity of treaties, and questions of law arising from criminal cases.

When a case has been decided in a state court, it can be brought before the Supreme Court only upon the ground that the decision of the lower court is not in accordance with the Constitution or the laws of the United States. The Supreme Court never considers questions of the guilt or innocence of a party, but only whether the law in the case is constitutional, or whether the provisions of the laws have been properly complied with.

For example, a man is tried for a crime and is found guilty. His lawyers claim that during the trial certain of the prisoner's rights, as guaranteed under the Constitution, were violated. The case is then appealed to the Supreme Court, and that body determines whether the law of the Constitution has been carried out. If the Supreme Court decides that the lawyer's claim is correct, the decision of the lower court is declared to be wrong, and a new trial is ordered.

XV

Inferior Courts. Besides the Supreme Court, the Constitution provides that Congress may establish inferior courts.

District Courts. At its first session, Congress established one inferior court for each state, called a District Court; and for each new state admitted to the Union thereafter, a District Court was to be established. As the population increased, the business of these courts became so great that it was necessary to divide some of the states into districts, so that now most of the larger states have two or more districts. New York State has four. There are seventy-eight such courts in all.

Each district has its justice, who is appointed, as are the justices of the Supreme Court, by the President with the consent of the Senate.

The District Court has jurisdiction in all cases of crime against the United States, and in all suits concerning ships and their cargoes, commerce by water, bankruptcy cases, cases arising under the tax, customs, patent, and copyright laws, and claims against the United States.

The Circuit Court of Appeals. So many cases were appealed from the lower courts to the Supreme Court, that the amount of work far exceeded the capacity of that court. To relieve the Supreme Court, in 1891 Congress established nine Circuit Courts of Appeals, one in each of the nine circuits into which the Union was divided.

Each of these Circuit Courts consists of three justices, one of whom may be a justice of the Supreme Court assigned to the circuit.

No judge, however, who has tried a case in the District Court, can sit in the trial of the same case in the Circuit Court of Appeals.

When a case has been tried in a District Court, and either of the parties to the case is dissatisfied with the result, it may be taken, that is, appealed, either to the Supreme Court or to the Circuit Court of Appeals. No other cases are tried in the latter court. From this court most civil cases may be appealed to the Supreme Court of the United States; but all criminal cases are finally decided by the Circuit Court of Appeals, unless the Supreme Court should give special permission to bring them before it.

The Court of Claims. In addition to these general courts, Congress has established a Court of Claims consisting of a chief justice and four associate justices. It hears and determines claims against the United States.

No one can bring suit against the national government without permission from Congress; but a person having a claim against it may submit the claim to the Court of Claims for trial, and if the claim is declared legal and just, it is usually paid by an Act of Congress.

Court of Customs Appeal. The Court of Customs Appeal consists of a presiding judge and four associate judges, appointed by the President by and with the consent of the Senate.

Its duties are to hear all cases arising on appeal from the final decisions of the Board of General Appraisers, regarding the classification of any merchandise imported into this country, the rate of duty imposed, or the fees and charges connected with it.

The Commerce Court. The Commerce Court was organized in 1910, and is composed of five judges, assigned from time to time by the Chief Justice of the Supreme Court from among the circuit judges of the United States.

This court has jurisdiction over all cases for the enforcement of any order of the Interstate Commerce Commission, other than for the payment of money; and of all cases brought to set aside, prohibit, annul, or suspend any such order. It also receives any cases arising under the Act regulating commerce with foreign countries and among the States.

THE CONSTITUTION

PREAMBLE

WE, the people of the United States, in order to form a more perfect union, establish justice, insure domestic tranquillity, provide for the common defence, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this CONSTITUTION for the United States of America.

ARTICLE I. THE LEGISLATIVE DEPARTMENT

SECTION I. *Congress in General*

All legislative powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives.

SECTION II. *House of Representatives*

1st Clause. The House of Representatives shall be composed of members chosen every second year by the people of the several states, and the electors in each state shall have the qualifications requisite for electors of the most numerous branch of the state legislature.

2d Clause. No person shall be a representative who shall not have attained to the age of twenty-five years, and been seven years a citizen of the United States, and who shall not, when elected, be an inhabitant of that state in which he shall be chosen.

3d Clause. Representatives and direct taxes shall be apportioned among the several states which may be included within this Union, according to their respective numbers, which shall be determined by adding to the whole number of free persons, including those bound to service for a term of years, and, excluding Indians not taxed, three-fifths of all other persons. (See Article XIV of the Amendments.) The actual enumeration shall be made within three years after the first meeting of the Congress of the United States, and within every subsequent term of ten years, in such manner as they shall by law direct. The number of representatives shall not exceed one for every thirty thousand, but each state shall have at least one representative; and until such enumeration shall be made, the state of New Hampshire shall be entitled to choose three, Massachusetts eight, Rhode Island and Providence Plantations one, Connecticut five, New York six, New Jersey four, Pennsylvania eight, Delaware one, Maryland six, Virginia ten, North Carolina five, South Carolina five, and Georgia three.

4th Clause. When vacancies happen in the representation from any state, the executive authority thereof shall issue writs of election to fill such vacancies.

5th Clause. The House of Representatives shall choose their speaker and other officers; and shall have the sole power of impeachment.

SECTION III. *The Senate*

1st Clause. The Senate of the United States shall be composed of two senators from each state, chosen by the legislature thereof, for six years; and each senator shall have one vote.

2d Clause. Immediately after they shall be assembled in consequence of the first election, they shall be divided as equally as may be into three classes. The seats of the senators of the first class shall be vacated at the expiration of the second year, of the second class at the expiration of the fourth year, and of the third class at the expiration of the sixth year, so that one-third may be chosen every second year; and if vacancies happen by resignation, or otherwise, during the recess of the legislature of any state, the executive thereof may make temporary appointments until the next meeting of the legislature, which shall then fill such vacancies.

3d Clause. No person shall be senator who shall not have attained to the age of thirty years, and been nine years a citizen of the United States, and who shall not, when elected, be an inhabitant of that state for which he shall be chosen.

4th Clause. The vice-president of the United States shall be president of the Senate, but shall have no vote unless they be equally divided.

5th Clause. The Senate shall choose their other officers, and also a president pro tempore, in the absence of the vice-president, or when he shall exercise the office of president of the United States.

6th Clause. The Senate shall have the sole power to try all impeachments. When sitting for that purpose, they shall be on oath or affirmation. When the president of the United States is tried, the chief-justice shall preside: and no person shall be convicted without the concurrence of two-thirds of the members present.

7th Clause. Judgment in cases of impeachment shall not extend further than to removal from office, and disqualification to hold and enjoy any office of honor, trust, or profit under the United States; but the party convicted shall nevertheless be liable and subject to indictment, trial, judgment, and punishment, according to law.

SECTION IV. *Both Houses*

1st Clause. The times, places, and manner of holding elections for senators and representatives, shall be prescribed in each state by the legislature thereof; but the Congress may at any time by law make or alter such regulations, except as to the places of choosing senators.

2d Clause. The Congress shall assemble at least once in every year, and such meeting shall be on the first Monday in December, unless they shall by law appoint a different day.

SECTION V. *The Houses Separately*

1st Clause. Each house shall be the judge of the elections, returns, and qualifications of its own members, and a majority of each shall constitute a quorum to do business; but a smaller number may adjourn from day to day, and may be authorized to compel the attendance of absent members, in such manner and under such penalties as each house may provide.

2d Clause. Each house may determine the rules of its proceedings, punish its members for disorderly behavior, and, with the concurrence of two-thirds, expel a member.

3d Clause. Each house shall keep a journal of its proceedings, and from time to time publish the same, excepting such parts as may in their judgment require secrecy; and the yeas and nays of the members of either house on any question, shall, at the desire of one-fifth of those present, be entered on the journal.

4th Clause. Neither house, during the session of Congress, shall, without the consent of the other, adjourn for more than three days, nor to any place other than that in which the two houses shall be sitting.

SECTION VI. *Privileges and Disabilities of Members*

1st Clause. The senators and representatives shall receive a compensation for their services, to be ascertained by law, and paid out of the treasury of the United States. They shall, in all cases, except treason, felony, and breach of the peace, be privileged from arrest during their attendance at the session of their respective houses, and in going to and returning from the same; and for any speech or debate in either house they shall not be questioned in any other place.

2d Clause. No senator or representative shall, during the time for which he was elected, be appointed to any civil office under the authority of the United States, which shall have been created, or the emoluments whereof shall have been increased, during such time; and no person holding any office under the United States, shall be a member of either house during his continuance in office.

SECTION VII. *Mode of Passing Laws*

1st Clause. All bills for raising revenue shall originate in the House of Representatives; but the Senate may propose or concur with amendments as on other bills.

2d Clause. Every bill which shall have passed the House of Representatives and the Senate shall, before it become a law, be presented to the president of the United States; if he approve, he shall sign it, but if not he shall return it, with his objections, to that house in which it shall have originated, who shall enter the objection at large on their journal, and proceed to reconsider it. If after such reconsideration two-thirds of that house shall agree to pass the bill, it shall be sent, together with the objections, to the other house, by which it shall likewise be reconsidered; and, if approved by two-thirds of that house, it shall become a law. But in all such cases the votes of both houses shall be determined by yeas and nays, and the names of the persons voting for and against the bill shall be entered on the journal of each house respectively. If any bill shall not be returned by the president within ten days (Sundays excepted) after it shall have been presented to him, the same shall be a law, in like manner as if he had signed it, unless the Congress by their adjournment prevent its return, in which case it shall not be a law.

3d Clause. Every order, resolution, or vote to which the concurrence of the Senate and House of Representatives may be necessary (except on a question of adjournment), shall be presented to the president of the United States; and, before the same shall take effect, shall be approved by him, or, being disapproved by him, shall be repassed by two-thirds of the Senate and House of Representatives, according to the rules and limitations prescribed in the case of a bill.

SECTION VIII. *Powers Granted to Congress*

The Congress shall have power—

1st Clause. To lay and collect taxes, duties, imposts, and excises; to pay the debts and provide for the common defence and general welfare of the United States; but all duties, imposts, and excises shall be uniform throughout the United States;

2d Clause. To borrow money on the credit of the United States;

3d Clause. To regulate commerce with foreign nations, and among the several states, and with the Indian tribes;

4th Clause. To establish a uniform rule of naturalization, and uniform laws on the subject of bankruptcies throughout the United States;

5th Clause. To coin money, regulate the value thereof, and of foreign coin, and fix the standard of weights and measures;

6th Clause. To provide for the punishment of counterfeiting the securities and current coin of the United States;

7th Clause. To establish post-offices and post-roads;

8th Clause. To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries;

9th Clause. To constitute tribunals inferior to the supreme court;

10th Clause. To define and punish piracies and felonies committed on the high seas, and offences against the law of nations;

11th Clause. To declare war, grant letters of marque and reprisal, and make rules concerning captures on land and water;

12th Clause. To raise and support armies; but no appropriation of money to that use shall be for a longer term than two years;

13th Clause. To provide and maintain a navy;

14th Clause. To make rules for the government and regulation of the land and naval forces;

15th Clause. To provide for calling forth the militia to execute the laws of the Union, suppress insurrections, and repel invasions;

16th Clause. To provide for organizing, arming, and disciplining the militia, and for governing such part of them as may be employed in the service of the United States, reserving to the states respectively the appointment of the officers, and the authority of training the militia according to the discipline prescribed by Congress;

17th Clause. To exercise exclusive legislation in all cases whatsoever, over such district (not exceeding ten miles square) as may, by cession of particular states, and the acceptance of Congress, become the seat of the government of the United States; and to exercise like authority over all places purchased by the consent of the legislature of the state in which the same shall be, for the erection of forts, magazines, arsenals, dockyards, and other needful buildings;—and

18th Clause. To make all laws which shall be necessary and proper for carrying into execution the foregoing powers, and all other powers vested by this Constitution in the government of the United States, or in any department or officer thereof.

SECTION IX. *Powers Denied to the United States*

1st Clause. The migration or importation of such persons as any of the states now existing shall think proper to admit, shall not be prohibited by the Congress prior to the year one thousand eight hundred and eight, but a tax or duty may be imposed on such importation, not exceeding ten dollars for each person.

2d Clause. The privilege of the writ of habeas corpus shall not be suspended, unless when in cases of rebellion or invasion the public safety may require it.

3d Clause. No bill of attainder or ex post facto law shall be passed.

4th Clause. No capitation or other direct tax shall be laid, unless in proportion to the census or enumeration hereinbefore directed to be taken.

5th Clause. No tax or duty shall be laid on articles exported from any state.

6th Clause. No preference shall be given by any regulation of commerce or revenue to the ports of one state over those of another; nor shall vessels bound to, or from, one state, be obliged to enter, clear, or pay duties in another.

7th Clause. No money shall be drawn from the treasury but in consequence of appropriations made by law; and a regular statement and account of the receipts and expenditures of all public money shall be published from time to time.

8th Clause. No title of nobility shall be granted by the United States; and no person holding any office of profit or trust under them, shall, without the consent of the Congress, accept of any present, emolument, office, or title, of any kind whatever, from any king, prince, or foreign state.

SECTION X. *Powers Denied to the States*

1st Clause. No state shall enter into any treaty, alliance, or confederation; grant letters of marque and reprisal; coin money; emit bills of credit; make any thing but gold and silver coin a tender in payment of debts; pass any bill of attainder, ex post facto law, or law impairing the obligation of contracts; or grant any title of nobility.

2d Clause. No state shall, without the consent of the Congress, lay any imposts or duties on imports or exports, except what may be absolutely necessary for executing its inspection laws; and the net produce of all duties and imposts laid by any state on imports or exports shall be for the use of the treasury of the United States; and all such laws shall be subject to the revision and control of the Congress.

3d Clause. No state shall, without the consent of Congress, lay any duty of tonnage, keep troops or ships of war in time of peace, enter into any agreement or compact with another state, or with a foreign power, or engage in war, unless actually invaded, or in such imminent danger as will not admit of delay.

ARTICLE II. THE EXECUTIVE DEPARTMENT

SECTION I. *President and Vice-President*

1st Clause. The executive power shall be vested in a president of the United States of America. He shall hold his office during the term of four years, and, together with the vice-president chosen for the same term, be elected as follows:

2d Clause. Each state shall appoint, in such manner as the legislature thereof may direct, a number of electors, equal to the whole number of senators and representatives to which the state may be entitled in the Congress; but no senator or representative, or person holding an office of trust or profit under the United States, shall be appointed an elector.

SECTION II. *Powers of the President*

1st Clause. The president shall be commander-in-chief of the army and navy of the United States, and of the militia of the several states, when called into the actual service of the United States; he may require the opinion, in writing, of the principal officer in each of the executive departments, upon any subject relating to the duties of their respective offices, and he shall have power to grant reprieves and pardons for offences against the United States, except in cases of impeachment.

2d Clause. He shall have power, by and with the advice and consent of the Senate, to make treaties, provided two-thirds of the senators present concur; and he shall nominate, and by and with the advice and consent of the Senate shall appoint, ambassadors, other public ministers and consuls, judges of the supreme court, and all other officers of the United States, whose appointments are not herein otherwise provided for, and which shall be established by law; but the Congress may by law vest the appointment of such inferior officers as they think proper, in the president alone, in the courts of law, or in the heads of departments.

3d Clause. The president shall have power to fill up all vacancies that may happen during the recess of the Senate, by granting commissions which shall expire at the end of their next session.

SECTION III. *Duties of the President*

He shall, from time to time, give to the Congress information of the state of the Union, and recommend to their consideration such measures as he shall judge necessary and expedient; he may, on extraordinary occasions, convene both houses, or either of them, and in case of disagreement between them, with respect to the time of adjournment, he may adjourn them to such time as he shall think proper; he shall receive ambassadors and other public ministers; he shall take care that the laws be faithfully executed; and shall commission all the officers of the United States.

SECTION IV. *Impeachment of the President*

The president, vice-president, and all civil officers of the United States, shall be removed from office on impeachment for, and conviction of, treason, bribery, or other high crimes and misdemeanors.

ARTICLE III. THE JUDICIAL DEPARTMENT

SECTION I. *The United States Courts*

The judicial power of the United States shall be vested in one supreme court, and in such inferior courts as the Congress may, from time to time, ordain and establish. The judges, both of the supreme and inferior courts, shall hold their offices during good behavior; and shall, at stated times, receive for their services a compensation, which shall not be diminished during their continuance in office.

SECTION II. *Jurisdiction of the United States Courts*

1*st Clause.* The judicial power shall extend to all cases, in law and equity, arising under this Constitution, the laws of the United States, and treaties made, or which shall be made, under their authority; to all cases affecting ambassadors, other public ministers and consuls; to all cases of admiralty and maritime jurisdiction; to controversies to which the United States shall be a party; to controversies between two or more states; between a state and citizens of another state; between citizens of different states; between citizens of the same state claiming lands under grants of different states, and between a state, or the citizens thereof, and foreign states, citizens, or subjects.

2d Clause. In all cases affecting ambassadors, other public ministers and consuls, and those in which a state shall be a party, the supreme court shall have original jurisdiction. In all the other cases before mentioned, the supreme court shall have appellate jurisdiction, both as to law and fact, with such exceptions and under such regulations as the Congress shall make.

3d Clause. The trial of all crimes, except in cases of impeachment, shall be by jury; and such trial shall be held in the state where the said crime shall have been committed; but when not committed within any state, the trial shall be at such place or places as the Congress may by law have directed.

SECTION III. *Treason*

1st Clause. Treason against the United States shall consist only in levying war against them, or in adhering to their enemies, giving them aid and comfort. No person shall be convicted of treason unless on the testimony of two witnesses to the same overt act, or on confession in open court.

2d Clause. The Congress shall have power to declare the punishment of treason, but no attainder of treason shall work corruption of blood, or forfeiture, except during the life of the person attainted.

ARTICLE IV. MISCELLANEOUS PROVISIONS

SECTION I. *State Records*

Full faith and credit shall be given in each state to the public acts, records, and judicial proceedings of every other state. And the Congress may by general laws prescribe the manner in which such acts, records, and proceedings, shall be proved, and the effect thereof.

SECTION II. *Privileges of Citizens*

1st Clause. The citizens of each state shall be entitled to all privileges and immunities of citizens in the several states.

2d Clause. A person charged in any state with treason, felony, or other crime, who shall flee from justice, and be found in another state, shall, on demand of the executive authority of the state from which he fled, be delivered up, to be removed to the state having jurisdiction of the crime.

3d Clause. No person held to service or labor in one state, under the laws thereof, escaping into another, shall, in consequence of any law or regulation therein, be discharged from such service or labor, but shall be delivered up on claim of the party to whom such service or labor may be due. (See Article XIII of the Amendments.)

SECTION III. *New States and Territories*

1st Clause. New states may be admitted by the Congress into this Union; but no new state shall be formed or erected within the jurisdiction of any other state; nor any state be formed by the junction of two or more states, or parts of states, without the consent of the legislatures of the states concerned, as well as the Congress.

2d Clause. The Congress shall have power to dispose of and make all needful rules and regulations respecting the territory or other property belonging to the United States; and nothing in this Constitution shall be so construed as to prejudice any claims of the United States, or of any particular state.

SECTION IV. *Guarantees to the State*

The United States shall guarantee to every state in this Union a republican form of government, and shall protect each of them against invasion; and, on application of the legislature, or of the executive (when the legislature cannot be convened), against domestic violence.

ARTICLE V. POWERS OF AMENDMENT

The Congress, whenever two-thirds of both houses shall deem it necessary, shall propose amendments to this Constitution, or, on the application of the legislatures of two-thirds of the several states, shall call a convention for proposing amendments, which, in either case, shall be valid, to all intents and purposes, as part of this Constitution, when ratified by the legislatures of three-fourths of the several states, or by conventions in three-fourths thereof, as the one or the other mode of ratification may be proposed by the Congress: provided that no amendment, which may be made prior to the year one thousand eight hundred and eight, shall in any manner affect the first and fourth clauses in the ninth section of the first article; and that no state, without its consent, shall be deprived of its equal suffrage in the Senate.

ARTICLE VI. PUBLIC DEBT, SUPREMACY OF THE CONSTITUTION, OATH OF OFFICE, RELIGIOUS TEST

1st Clause. All debts contracted and engagements entered into, before the adoption of this Constitution shall be as valid against the United States under this Constitution, as under the Confederation.

2d Clause. This Constitution, and the laws of the United States which shall be made in pursuance thereof, and all treaties made, or which shall be made, under the authority of the United States, shall be the supreme law of the land; and the judges in every state shall be bound thereby, anything in the Constitution or laws of any state to the contrary notwithstanding.

3d Clause. The senators and representatives before mentioned, and the members of the several state legislatures, and all executive and judicial officers, both of the United States and of the several states, shall be bound by oath or affirmation to support this Constitution; but no religious test shall ever be required as a qualification to any office or public trust under the United States.

ARTICLE VII. RATIFICATION OF THE CONSTITUTION

The ratification of the conventions of nine states shall be sufficient for the establishment of this Constitution between the states so ratifying the same.

AMENDMENTS

PROPOSED BY CONGRESS, AND RATIFIED BY THE LEGISLATURES OF THE SEVERAL STATES, PURSUANT TO THE FIFTH ARTICLE OF THE ORIGINAL CONSTITUTION

ARTICLE I. *Freedom of Religion*

Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the government for a redress of grievances.

ARTICLE II. *Right to Bear Arms*

A well-regulated militia being necessary to the security of a free state, the right of the people to keep and bear arms shall not be infringed.

ARTICLE III. *Quartering Soldiers on Citizens*

No soldier shall, in time of peace, be quartered in any house without the consent of the owner, nor in time of war but in a manner to be prescribed by law.

ARTICLE IV. *Search Warrants*

The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated; and no warrants shall issue but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

ARTICLE V. *Trial for Crime*

No person shall be held to answer for a capital or otherwise infamous crime, unless on a presentment or indictment of a grand jury, except in cases arising in the land or naval forces, or in the militia, when in actual service in time of war or public danger; nor shall any person be subject for the same offence to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property without due process of law; nor shall private property be taken for public use without just compensation.

ARTICLE VI. *Rights of Accused Persons*

In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial by an impartial jury of the state and district wherein the crime shall have been committed, which district shall have been previously ascertained by law; and to be informed of the nature and cause of the accusation; to be confronted with the witnesses against him; to have compulsory process for obtaining witnesses in his favor, and to have the assistance of counsel for his defence.

ARTICLE VII. *Suits at Common Law*

In suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury shall be otherwise re-examined in any court of the United States than according to the rules of the common law.

ARTICLE VIII. *Excessive Bail*

Excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted.

ARTICLE IX. *Rights Retained by the People*

The enumeration in the Constitution of certain rights shall not be construed to deny or disparage others retained by the people.

ARTICLE X. *Reserved Rights of the States*

The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the states respectively, or to the people.

ARTICLE XI. *Power of the Federal Court*

The judicial power of the United States shall not be construed to extend to any suit in law or equity, commenced or prosecuted against one of the United States by citizens of another state, or by citizens or subjects of any foreign state.

ARTICLE XII. *Revisions of Electoral Law*

1*st Clause.* The electors shall meet in their respective states, and vote by ballot for president and vice-president, one of whom, at least, shall not be an inhabitant of the same state with themselves; they shall name in their ballots the person voted for as president, and in distinct ballots the person voted for as vice-president, and they shall make distinct lists of all persons voted for as president, and of all persons voted for as vice-president, and of the number of votes for each, which lists they shall sign and certify, and transmit sealed to the seat of the government of the United States, directed to the president of the Senate;—the president of the Senate shall, in presence of the Senate and House of Representatives, open all the certificates, and the votes shall then be counted;—the person having the greatest munber of votes for president shall be the president, if such number be a majority of the whole number of electors appointed; and if no person have such majority, then from the persons having the highest numbers, not exceeding three on the list of those voted for as president, the House of Representatives shall choose immediately, by ballot, the president. But in choosing the president the votes shall be taken by states, the representation from each state having one vote; a quorum for this purpose shall consist of a member or members from two-thirds of the states, and a majority of all the states shall be necessary to a choice. And if the House of Representatives shall not choose a president whenever the right of choice shall devolve upon them, before the fourth day of March next following, then the vice-president shall act as president, as in the case of the death or other constitutional disability of the president.

2d Clause. The person having the greatest number of votes as vice-president shall be the vice-president, if such number be a majority of the whole number of electors appointed; and if no person have a majority, then from the two highest numbers on the list the Senate shall choose the vice-president; a quorum for the purpose shall consist of two-thirds of the whole number of senators, and a majority of the whole number shall be necessary to a choice.

3d Clause. But no person constitutionally ineligible to the office of president shall be eligible to that of vice-president of the United States.

4th Clause. The Congress may determine the time of choosing the electors, and the day on which they shall give their votes; which day shall be the same throughout the United States.

5th Clause. No person except a natural-born citizen, or a citizen of the United States at the time of the adoption of this Constitution, shall be eligible to the office of president; neither shall any person be eligible to that office who shall not have attained to the age of thirty-five years, and been fourteen years a resident within the United States.

6th Clause. In case of the removal of the president from office, or of his death, resignation, or inability to discharge the powers and duties of the said office, the same shall devolve on the vice-president; and the Congress may by law provide for the case of removal, death, resignation, or inability, both of the president and vice-president, declaring what officer shall then act as president, and such officer shall act accordingly, until the disability be removed, or a president shall be elected.

7th Clause. The president shall, at stated times, receive for his services a compensation which shall neither be increased nor diminished during the period for which he shall have been elected, and he shall not receive within that period any other emolument from the United States, or any of them.

8th Clause. Before he enter on the execution of his office he shall take the following oath or affirmation:—

"I do solemnly swear (or affirm) that I will faithfully execute the office of president of the United States, and will, to the best of my ability, preserve, protect, and defend the Constitution of the United States."

ARTICLE XIII. *Slavery*

SECTION I. Neither slavery nor involuntary servitude, except as a punishment for crime, whereof the party shall have been duly convicted, shall exist within the United States, or any place subject to their jurisdiction.

SEC. II. Congress shall have power to enforce this article by appropriate legislation.

ARTICLE XIV. *Citizenship and Representation*

SECTION I. All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the state wherein they reside. No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property, without due process of law, nor deny any person within its jurisdiction the equal protection of the laws.

SEC. II. Representatives shall be apportioned among the several states according to their respective numbers, counting the whole number of persons in each state, excluding Indians not taxed. But when the right to vote at any election for the choice of electors for president and vice-president of the United States, representatives in Congress, the executive and judicial officers of a state, or the members of the Legislature thereof, is denied to any of the male inhabitants of such state, being twenty-one years of age, and citizens of the United States, or in any way abridged, except for participation in rebellion or other crime, the basis of representation therein shall be reduced in the proportion which the number of such male citizens shall bear to the whole number of male citizens twenty-one years of age in such state.

Sec. III. No person shall be a senator or representative in Congress, or elector of president and vice-president, or hold any office, civil or military, under the United States, or under any state, who, having previously taken an oath as a member of Congress, or as an officer of the United States or as a member of any state Legislature, or as an executive or judicial officer of any state, to support the Constitution of the United States, shall have engaged in insurrection or rebellion against the same, or given aid or comfort to the enemies thereof. But Congress may, by a vote of two-thirds of each house, remove such disability.

Sec. IV. The validity of the public debt of the United States, authorized by law, including debts incurred for payment of pensions and bounties for services in suppressing insurrection or rebellion, shall not be questioned. But neither the United States nor any state shall assume or pay any debt or obligation incurred in aid of insurrection or rebellion against the United States, or any claim for the loss or emancipation of any slave; but all such debts, obligations, and claims shall be held illegal and void.

Sec. V. The Congress shall have power to enforce, by appropriate legislation, the provisions of this article.

ARTICLE XV. *Right of Suffrage*

Section I. The right of citizens of the United States to vote shall not be denied or abridged by the United States, or by any state, on account of race, color, or previous condition of servitude.

Sec. II. The Congress shall have power to enforce this article by appropriate legislation.

ARTICLE XVI. *Income Tax*

The Congress shall have power to lay and collect taxes on incomes, from whatever source derived, without apportionment among the several states, and without regard to any census or enumeration.

ARTICLE XVII. *Election of Senators*

Section I. The Senate of the United States shall be composed of two senators from each state, elected by the people thereof, for six years; and each senator shall have one vote. The electors in each state shall have the qualifications requisite for electors of the most numerous branch of the state legislatures.

Sec. II. When vacancies happen in the representation of any state in the Senate, the executive authority of such state shall issue writs of election to fill such vacancies: Provided, That the legislature of any state may empower the executive thereof to make temporary appointment until the people fill the vacancies by election as the legislature may direct.

SEC. III. This amendment shall not be so construed as to affect the election or term of any senator chosen before it becomes valid as part of the Constitution.